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No. 60

North Korean Plant Data



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[Text] Foreword

This research center has since its inception been engaged in the collection, analysis and study of data regarding international affairs, with particular emphasis on the Republic of Korea and North Korea, the two countries which are close to ours and have profound bearing on the peace and security of Asia in general and of our country in particular.

In recent years, regarding the Korean issue, the mass media have reported to a considerable extent, good or bad, but it is our opinion that the Republic of Korea and North Korea, still victims of misunderstanding and prejudice, are not yet fully understood. Especially regarding North Korea we believe it may safely be said that the unavailability of sufficient information often leads to exaggeration and misunderstanding and as a result, erroneous judgment prevails.

In light of the situation, this revised KITA CHOSEN NO KOGYO No 1 represents an effort in book form to make known the true state of North Korea's industrial power and its purpose of industrial construction.

This book contains an elaborate research solely based on the original data from the North Korean sources up to the end of April 1979 as well as on original data from the Soviet and Chinese sources. This research center's opinion is not reflected in any way and as such, we believe this book will prove to be a valuable source of data.

Tokyo, May 1979

The Joint Research Center for
International Relations

Masahide Kanayama, Director

Chapter 1. Introduction

As is known to all, North Korea is operating a planned economy. So, North Korea's industrial base has come to be what it is today after several economic plans.

North Korea has implemented several economic plans as shown in the following table, and the past 33 years may be broadly divided into three stages in terms of developmental stages of the economy: 1945-1960, 1961-1970 and 1971 and after.

The first stage, 1945-1960, was a period in which the communist government was set up, the Korean War was fought, and after postwar rehabilitation, the groundwork was laid somehow as a socialist industrial state. Internationally, it was a period of so-called Sino-Soviet honeymoon and North Korea was able to get material and moral help from both China and the Soviet Union, the happiest period of time for North Korea.

But the second stage, 1961-1970, was an unfortunate period of time for North Korea during which North Korea was sucked into internecine strife, first with the Soviet Union as a ripple effect of the Sino-Soviet confrontation during the first half of the period, and then with China during the latter half of the period. In particular, during this period there was the Cuban crisis, and adverse effects stemming from the Vietnam War. Against this backdrop, North Korea pursued the policy of pushing ahead with economic construction and national defense construction in parallel, focusing firepower on the military. As a result, economic construction was not going smoothly. But North Korea declared before the world "our country has grown up as a powerful socialist industrial state" (the Fifth Party Congress in November 1970) and was to rush into the 1970's, a new era of East-West detente.

In the third stage, 1970 and after, from its bitter experience in the Sino-Soviet confrontation, North Korea began emphasizing the "chuche" ideology. This became an entirely new era in which North Korea began to make strong efforts to develop diplomatic relations with the Third World on the one hand and to seek contact with the economies of the West on the other. Especially by making contact with Japan and Western Europe,

North Korea brought in new technology and facilities. It became an era of technical revolution indeed for North Korea. But from its contact with the West, North Korea ran into an unexpected situation of being unable to pay its foreign debts for the modern plant facilities imported, thus unwittingly betraying its economic frailties. The Six-Year Plan that began in 1971 came to be terminated to all intents and purposes as of the end of August 1975, and after some two and a half years of readjustment and preparation, the second Seven-Year Plan began in 1978. Under the Six-Year Plan some significant strides were made such as the construction of large-scale factories (shipbuilding, machine-making and electric power generation) and of the petrochemical industry, a first in North Korea. But looming large behind them were problems such as an imbalance between various economic branches, incomplete economic structure, slow innovations in terms of science and technology, excessively high costs of products.

How will North Korea proceed to resolve these problems? This will provide a basis for prognosis of the future of North Korea's economy.

A history of North Korea's economic plans follows:

A History of North Korea's Economic Plans

Year	Plan or Period	Basic Targets	Results	Remarks
1945/ 1946	Period of preparation	1) Nationalize key industries. 2) Rehabilitate and ready facilities left behind by Japan. 3) Prepare for implementation of an economic plan.	1) Land reform is carried out. 2) Industries are nationalized.	
1947	First 1-Year Plan	1) Ready factories and enterprises. 2) Produce daily necessities. 3) Resolve food problems.		
1948	Second 1-year Plan			
1949/ 1950	First 2-Year Plan	1) Raise production to 1944 level in all economic branches. 2) Install new industrial facilities. 3) Push mechanization of agriculture. 4) Socialize commerce.		Plan is interrupted on outbreak of Korean War in June 1950
1951/ 1953	Korean War	1) Put the economy on a wartime footing. 2) Build new industrial zones.	1) Fighting capacity is sustained. 2) Total volume of industrial production for 1953 falls 64 percent compared to 1949.	Some key factories are evacuated to Manchuria or to mountainous areas in the northern region. This lays the industrial foundation for a munitions industrial zone in mountainous areas of the northern region (Chagang Prov.).
1954/ 1956	Postwar Rehabilitation 3-Year Plan	1) Lay the groundwork for the system of a planned economy. 2) Rehabilitate destroyed facilities and raise production to 1949 level.	1) Heavy industry bases are rehabilitated and reconstructed. 2) Economic, political, material	A clear view of the future of the economic policy is gained.

(1954/1956 continued on next page)

A History of Economic Plans (Continued)

Year	Plan or period	Basic Targets	Results	Remarks
1954/ 1956 (ctd)		3) Rationally deploy factories and enterprises.	preparations are basically completed for agricultural cooperatization.	
1957/ 1960	First 5-Year Plan	1) Strengthen the system of the planned economy. 2) Consolidate foundations as socialist industrial state (with priority to heavy industry but simultaneously developing light industry and agriculture).	1) Socialization of industry, agriculture, commerce is completed in 1958. 2) First 5-Year Plan is fulfilled in 1959 (but industry 77 percent, agriculture 90 percent). 3) Current is devalued to a one-hundredth in February 1959.	Imbalance surfaces between agriculture and industry; light industry is neglected.
1961/ 1967	7-Year Plan	1) Develop heavy industry with priority. 2) Push technical innovations of light industry and agriculture. 3) Push cultural revolution (improve standard of living for people).	1) Industrial target is achieved 72.2 percent. 2) Agricultural target is achieved 57-67 percent. 3) Fishery target is achieved 58-70 percent.	Worsening relations with the Soviet Union delay economic cooperation while military tension mounts; party representatives conference in October 1966 decides on a 3-year extension of the 7-year plan but overshadowed by reinforcement of military strength, economic construction makes little progress.
1968/ 1970	7-Year Plan is extended 3 years.	1) Push economic and military construction simultaneously. 2) Push technical revolution. 3) Strengthen munitions industry.	1) Only targets for coal and electricity are achieved.	

(Continued on next page)

A History of Economic Plans (Continued)

Year	Plan or Period	Basic Targets	Results	Remarks
1971/ 1976	6-Year Plan	1) Modernize industrial facilities. 2) Push technical revolution.	1) Targets for iron and steel and cement are not achieved; others are achieved by end of August 1975. 2) Petroleum refinery is built; the building of petrochemical industry gets under way.	Importation of plant facilities from Western Europe and Japan begins, but debt payment cannot be met. Plan is terminated as of end of August 1975.
1977	Period of adjustment and preparation	1) Occupy the steel and cement heights under 6-year plan which were not reached. 2) Ease the strains on transport.	1) The steel and cement heights under 6-year plan are occupied at end of 1977.	This is made a period of preparation for a new plan.
1978/ 1984	Second 7-Year Plan	1) Scientize economic management. 2) Eradicate bureaucracy. 3) Push technical revolution. 4) Develop petrochemical industry. 5) Lower production costs. 6) Strengthen conservation struggle. 7) Develop foreign trade. 8) Modernize transport (railways and harbors). 9) Strengthen independent economic accounting system.		The goals are set conservatively lower than the ten major targets announced in February 1974. The goals depend on high hopes for aid from the Soviet Union.

[End this table]

Chapter 2. North Korea's Industrial Zones

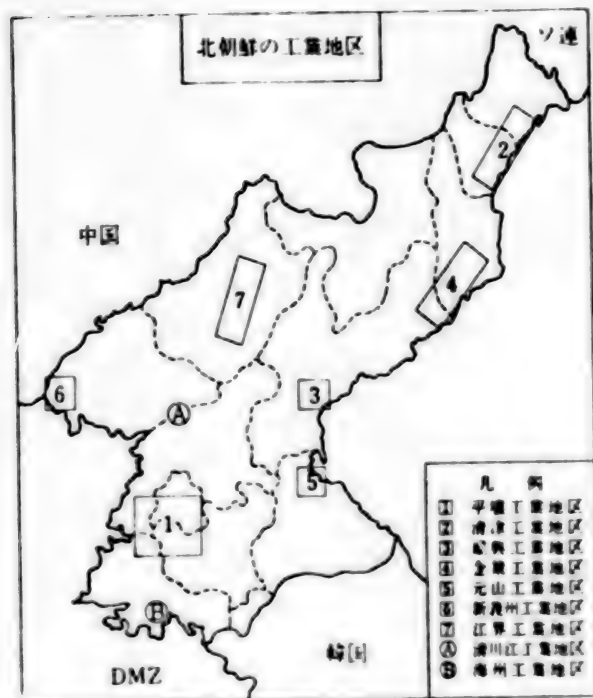
I. General Conditions

The way the natural geography of Korea is and natural resources are distributed in the peninsula, North Korea may be characterized as a region of underground, hydroelectric power and forestry resources, and the Republic of Korea an agricultural region.

Against such a backdrop of natural geographic conditions, Japan had pursued in Korea the policy of "agriculture for south and industry for north" prior to World War II. As a result, at the end of the world war there were more favorable mining and industrial facilities remaining in North Korea than in the Republic of Korea, but because of the destruction caused in the transitional chaos and the plunder of industrial facilities by the invading Soviet troops, North Korea could not maintain industrial production at the prewar level. So, North Korea had made efforts to restore industry to prewar conditions by 1950 but everything was destroyed during the Korean War from 1950 to 1953. Complete rehabilitation was achieved by 1960 or thereafter and with aid from the communist bloc, new factories were built on the sites of destroyed factories which Japan had built in various industrial districts. In addition, from the time of the Korean War North Korea built a new munitions industry zone around Kanggye, Chagang Province, in the mountainous areas of the northern region, and laid the groundwork for self-dependent national defense.

The peculiarities of North Korea's industrial zones are, as mentioned earlier, that they are scattered all over the country because North Korea built factories in the same industrial zones created by Japan before the world war, a great disadvantage in terms of transportation. Again, the natural geographic conditions divide the industrial zones in the east and west, and this makes matters worse because sea transportation between the two is impossible. The industrial zone by the Sea of Japan (Ch'ongjin Industrial Zone) is in close proximity to the Soviet Union and the industrial zone by the Yellow Sea (Sinuiju Industrial Zone) borders on China, still another peculiarity bearing on close relations with both the Soviet Union and China.

North Korea's Industrial Zones



Legend

1. Pyongyang Industrial Zone
2. Ch'ongjin Industrial Zone
3. Hamhung Industrial Zone
4. Kim Ch'aek Industrial Zone
5. Wonsan Industrial Zone
6. Sinuiju Industrial Zone
7. Kanggye Industrial Zone
- A. Ch'ongch'on'gang Industrial Zone
- B. Haeju Industrial Zone

II. An Outline of Each Industrial Zone

1. Pyongyang Industrial Zone

This is the largest industrial zone in North Korea with Pyongyang City at the center and includes the cities of Namp'o and Tae'an in South P'yongan Province, and Songnim and Sariwon in North Hwanghae Province. This zone has long been flourishing, blessed with favorable conditions such as the Taedong River as a rich water resource, water-borne transportation, and harbors (Namp'o and Songnim). In particular, Pyongyang and vicinity abound in anthracite and limestone, and South Hwanghae Province is blessed with rich underground resources such as Unnyul Iron Mine. Thus the zone had developed iron and machine industries from early on.

At present in this zone are located the Kangson Combined Steel Works, the largest in North Korea, and Kumsong Tractor Factory, Tae'an Electrical Equipment Factory, Kimchongt'ae Electric Locomotive Works, Namp'o Shipyard, Namp'o Glass Factory, and in addition, Hwanghae Iron Works, April 13 Iron Works, Pyongyang General Textile Mill, Pyongyang Corn Products Factory. Under the second Seven-Year Plan are projected the construction of Taedonggang Power Plant (planned output 450,000 kw) along the middle reaches of the Taedong River and the boosting of Pukch'ang Thermal Power Station output to 1.6 million kw; in addition, the construction of Tae'an Heavy Machine Works, a first in North Korea.

The peculiarities of this zone are that it is a comprehensive industrial zone containing from light industries to heavy industries and that munitions factory (Kangdong Precision Machine Works) and militarily convertible factories (Kumsong Tractor Factory, Man'gyongdae Bulldozer Factory and Kangson Combined Steel Works) are located in this zone.

2. Ch'ongjin Industrial Zone

This is a heavy industry zone including Unggi County and Najin City centered around Ch'ongjin City, and its main industries are iron and steel-making and metallurgy. Blessed with abundant iron ore deposits of Musan Iron Mine estimated at 1 billion tons, this zone has its iron and steel-making industry flourishing from early on. North Korea rebuilt and expanded iron works on the former sites of Nippon Seitetsu and Mitsubish Seitetsu. These are the present Kim Ch'aek Iron Works and Ch'ongjin Steel Works.

In addition to the iron works, there are Ch'ongjin Railway Works, Ch'ongjin Chemical Fiber Plant and Sodusu Power Plant. This zone is also known for another underground resource, lignite in the Aoji area. Under the Six-Year Plan (1971-1976) Sungni Chemical Plant, the first North Korean crude oil processing plant, was built in the Unggi district, and its present annual processing capacity is 1 million tons.

Under the second Seven-Year Plan are projected the construction at Kim Ch'aek Iron Works of a cold rolling mill with an annual capacity of 400,000 tons along with the electrification of the double track railway line between Musan and Ch'ongjin, an additional installation of a concentrated ore pipeline, and an expansion of the Aoji Chemical Plant. Aoji Chemical Plant, which is not a petrochemical plant, is projected to manufacture ammonium by gasification of coal, chemically processing lignite available in the Aoji area. It is anticipated that the chemical industry, in addition to the iron industry, will develop in this zone in the future.

This zone with its iron and petroleum industries is characterized by its deep relations with the Soviet Union.

3. Hamhung Industrial Zone

This is North Korea's largest chemical industry zone centered around Hamhung City. The chemical industry has been flourishing in this zone since Japanese days, blessed with abundant electric power resources along the Mach'ollyong mountain range (Changjin'gang Power Plant and Pujon'gang Power Plant) and with industrial water from the Songch'on River. It is on this basis that North Korea has built its present chemical industry. In this zone there are the Hungnam Combined Fertilizer Enterprise and 2.8 Combined Vinalon Enterprise; in particular, the vinalon mill, known for its excellence in technology, is exporting its products to Peking. In addition, there are the Yongson Machine Works, the biggest in North Korea, and Hungnam Smeltery, the former engaged in the manufacture of large-size machines and the latter in the smelting of crude copper.

4. Kim Ch'aek Industrial Zone

This zone, centered around Kim Ch'aek County (Songjin in Japanese days), includes Kilchu County and Myonggan County, North Hamgyong Province, and Tanch'on County, South Hamgyong Province. Except for the Songjin Steel Works (Joshin Steel Works of Nippon Koshuha in Japanese days), North Korea has created this industrial zone afresh.

At present in this zone there are Tanch'on Mining Equipment Factory, Kim Ch'aek Ship Factory, Myonggan Chemical Plant, Kilchu Pulp Mill, and Tanch'on Magnesium Plant. Tanch'on Magnesium Plant, a representative factory of this zone, has been built to tap the Yongyang Magnesium Mine, and is known for its share in earning foreign currencies. At present two 110m rotary furnaces are under construction [at this plant].

Under the second Seven-Year Plan is projected the construction of Tanch'on Smeltery to tap the rich mineral resources in the Tanch'on district.

5. Wonsan Industrial Zone

Centered around Wonsan City, Kangwon Province, this zone includes Munch'on County and Ch'onnae County, Kangwon Province, and receives electricity from the Hamhung industrial zone and the power plant in the Diamond Mountains.

In this zone there are Munp'yong Smeltery, Munch'on Machine Works, Wonsan Motor Works, June 4 Rolling Stock Factory, Wonsan Shipyard, "Ch'ungsong" Model Tractor Factory, Ch'onnaeri Cement Plant. The June 4 Rolling Stock Factory is known as North Korea's biggest railway rolling stock works. Wonsan City is also known as a modern rest center and a naval port but belongs in the second class as an industrial city. However, the opening in 1978 of the Pyongyang-Wonsan freeway, and the completion of electrification of the railways connecting Kwon, Wonsan, Sep'o, Ich'on and Pongsan, and of the expansion of Wonsan Shipyard, which are both projected under the second Seven-Year Plan (1978-1984), will have laid the groundwork for Wonsan to develop into a first-class industrial city.

6. Sinuiju Industrial Zone

This is an industrial zone centered around Sinuiju City, North P'yongan Province. In this zone there are the Pukchung Machine Works, the only heavy-duty diesel engine works of North Korea, and Nakwon Machine Works, Yongamp'o Shipyard, Sinuiju Chemical Fiber Plant, Sinuiju Textile Mill; and the Sup'ung Power Plant is the prime source of electricity for this zone.

At present at Paengma-ri, Pihyon County, North P'yongan Province is under construction the Ponghwa Chemical Plant (oil refinery) with aid which is believed to be from China. The construction is currently in the second-stage project following completion of the first-stage project.

When completed, this Ponghwa Chemical Plant will become a second oil refinery in North Korea after the Sungni Chemical Plant in the Ch'ongjin Industrial Zone and will be in a position to process 2.5 million tons of crude oil.

Before the world war there were only the Oji Paper Mill and a small smeltery, but with the construction of the aforementioned factories, industrial organization has been gradually augmented. During the Six-Year Plan (1971-1976) Tokhyon Mine (iron ore) began to be developed, and positive efforts are being made to tap other underground resources in the zone.

7. Kanggye Industrial Zone

The Kanggye Industrial Zone was a simple mountain village area in Japanese days but with the construction of the munition industry after the Korean War, has become a precision machine industry center in North Korea. In this zone there are the Huich'on Machine Tool Works, Huich'on Precision Machine Works, Kanggye Tractor Factory, Amnokkang Tire Factory and the September Textile Mill. Practically all of the factories have been constructed underground with an eye on a military necessity. The textile mill with 50,000 spindles, which was built in Kanggye in 1978, is also believed to be an underground mill.

Not only are the munitions factories producing North Korea's AK-47 automatic rifles and various kinds of artillery shells all concentrated in this zone, but precision machine works supporting the munitions industry are located here. This bespeaks how much effort North Korea is putting into the munitions industry. Except for certain authorized personnel, no foreigners have ever visited this zone and very little details are known.

8. Other Industrial Zones

There are two zones which have not yet reached the level of a complete industrial zone but which are expected to develop into full-fledged industrial zones in the future.

A. Ch'ongch'on'gang Industrial Zone

At present in the Anju district of South P'yongan Province, North Korea's one and only petrochemical plant is under construction, part of which has already been completed. In this zone there are currently no other significant factories but the zone enjoys convenience in transportation, a plentiful supply of industrial water and electricity, and is expected to develop into a modern chemical industrial zone in the future. Because it straddles the Ch'ongch'on River, the zone used to suffer inconvenience in transportation but during the Six-Year Plan (1971-1976) the river was made navigable up to the middle reaches and in addition, "Ch'ongch'on Bridge" was built in 1978, connecting the Ch'ongnyon Combined Chemical Enterprise and Anju County; and along with road construction pushed, this is facilitating transportation.

B. Haeju Industrial Zone

The Haeju district began taking on the shape of an industrial zone as Haeju became an international trade port in 1973, and about the same time the Haeju Smelter and Haeju Phosphate Fertilizer Plant were built. The biggest factory in this zone is the Haeju Cement Plant and its expansion is projected under the second Seven-Year Plan. During the Six-Year Plan (1970-1976) the Pup'o Mine (nonferrous metal) was developed, and the Haeju Smelter is expected to greatly develop in the future. There has been no power plant in this zone but the construction of Haeju Thermal Power Station is projected under the second Seven-Year Plan (1978-1984).

In Haeju and vicinity there used to be a lot of narrow gage railways but except for a part of them, they have now all been replaced with standard gage. As under the second Seven-Year Plan the construction of a new railway between Changyon and Ongjin and an expansion of the Haeju harbor are projected, convenience in transportation is expected to be enhanced even more.

Chapter 3. The Present Conditions of Enterprises and Factories

I. Heavy Industries

1. Electric Power Plants

North Korea, mountainous, is blessed with water resource. Before the world war Japan had built many hydroelectric power stations, taking advantage of this rich water resource, such as Sup'ung Power Plant, Pujon'gang Power Plant and Changjin'gang Power Plant. Sup'ung Power Plant, the biggest of them, had seven Hitachi 100,000 kw generators and transmitted 320,000 kw to Manchuria and the rest to all of Korea. Some generators of the Sup'ung Power Plant were taken away by the Soviet troops after the end of World War II, but after the Korean War, a 100,000 kw generator was installed with Soviet aid, and at present the power plant has seven generators. As a power source for the chemical plants in Hungnam (at present the Hungnam District of Hamhung City) the Pujon'gang Power Plant and Changjin'gang Power Plant were built, damming the Changjin River, a tributary of the Yalu flowing into the Manchurian side. The total output capacity of all the hydroelectric power plants including those stations which North Korea took over from Japan after the world war was 1.6 million kw.

North Korea's hydroelectric power resources are estimated at approximately 8.86 million kw. In order to utilize such potential resources, North Korea has since been stepping up the construction of hydroelectric power stations. Among others there are two large-scale hydroelectric power stations: the Unbong Power Plant along the upper reaches of the Yalu and the Sodusu Power Plant in Ch'ongjin City drawing water from the upper reaches of the Sodusu River, a tributary of the Tumen. It is believed that the construction of Unbong Power Plant, as a joint venture with China, was begun about 1960 and completed in 1970 or thereabout. The joint-venture agreement entered into for the construction of the power plant stipulated that North Korea build the dam and China the power plant and waterways because the power plant and waterways were to be located in the territory of China. But according to recent information, the tracts of land in Chinese territory where the waterways and the power plant are located and the neighborhood areas, part of which the Unbong line of the North Korean railways straddles, have been leased by North Korea. It is

not known exactly what percentage of the total output of this power plant is being transmitted to North Korea but it is believed that practically all of the output is being transmitted to North Korea and in return, China is receiving 50 percent of the water right in kind or cash. The Sodusu Power Plant is the last power plant possible under the water system of the Tumen River, a plant Japan had originally planned to build. Based on this blueprint, North Korea carried out the construction project with West Germany's technical aid. The same as in the case of the Pujon'gang Power Plant and Changjin Power Plant, damming the water at the upper reaches of the Sodusu River flowing into Manchuria and channeling the water into Ch'ongjin, a port city of the Sea of Japan, the Sodusu Power Plant generates electricity from the head of water. Practically all the other hydroelectric plants are medium or small in scale, and the Taedonggang Power Plant currently under construction at Kumsong-ri, Tokch'on County, South P'yongan Province, along the middle reaches of the Taedong River will have an estimated output of 450,000 kw, the largest in the water system of the Taedong.

The focal point of the problem of North Korea's hydroelectric power generation is the multiple plants constructed in the same water system. The Sup'ung Power Plant and Unbong Power Plant are a case in point, and once the volume of water decreases, the plant in the lower reaches also suffers a corresponding decrease in output. Another difficulty is that the generating facilities are old, require constant repairs, and are plagued by frequent breakdowns. For example, most recently the Changjin'gang Power Plant had to make repairs on four generators all at once. As a result, the operational rate of every hydroelectric power plant has become very low. In particular, the decrease in output caused by low water during the winter and the increase in the consumption of electricity are posing a great economic bottleneck for North Korea.

Dependence on water is inevitably subject to natural conditions and moreover, the construction of a hydroelectric power plant requires a lot of money and time; so, since 1960 North Korea has been shifting emphasis on to the construction of thermal power plants. North Korea abounds in coal, the fuel needed for thermal power generation and is therefore at a great advantage in constructing thermal power plants. Pyongyang Thermal Power Plant and Pukch'ang Thermal Power Plant have been built with Soviet aid and in addition, as factory power sources, Unggi Thermal Power Plant and Ch'ongjin Thermal Power Plant (under construction) have been built with Soviet aid. Also, as the power source for the Ch'ongnyon Chemical Plant, the construction of Ch'ongch'on'gang Thermal Power Plant was completed in 1978. In North Korea, a thermal power plant usually has a 50,000 kw generator but the Pukch'ang Thermal Power Plant, as an exception, has a 100,000 kw generator. The fuel for the boiler for thermal power generation is mainly coal but coal is used in mixture with some heavy oil. This is so because North Korea has abundant coal. But an exception to this is the Unggi Thermal Power Plant, which uses the waste gas generated by the Sungni Chemical Plant (oil refinery).

On North Korea's west coast (the Yellow Sea) the range of tide is extreme and it is believed there are some 11 points where it is possible to take advantage of the range of tide for power generation. One of the points is Taean-tong, Taean City, South P'yongan Province near the mouth of the Taedong River, and here is located the Taean Tidal Power Plant although small in scale.

So far there is no nuclear power plant in North Korea but in light of the fact that North Korea once negotiated with countries in the West for the importation of facilities for a nuclear power plant and that having established an atomic power research institute (director: Cho Sang-nok) within the Academy of Sciences, it is maintaining constant contact with the Soviet Union, it seems that North Korea is very much interested in importing facilities for a nuclear power plant.

Under the second Seven-Year Plan (1978-1984) it is projected to increase the output capacity of the Pukch'ang Thermal Power Plant from 1.2 million kw to 1.6 million kw, to newly construct Haeju Thermal Power Plant, Taedonggang Power Plant, No 2 Huich'on Power Plant, No 3 Sodusu Power Plant which, all told, will represent an increase of some 1.5 million kw in power output.

Power Plants [For key to source references, see Bibliography of Documents Used]

Name	Location	Capacity	Remarks	Source
Sup'ung (Hydro) power Plant	Sup'ung Laborers' Settlement, Sakchu County, No P'yonan Province	700,000 kw	Station is reconstructed with Soviet aid-in-plant and Chinese labor. Station is under joint management with China. Capacity is boosted by 100,000 kw in 1977 with improvement of insulation. Electricity transmitted to Korea in Japanese days: 320,000 kw Director, Technical Research Office: Yi Tal-sun	A-58-483 KK-16-56 KN-7702-23 B-46-467 NS 740226
Sodusu (Hydro) power Plant	Puyun District, Ch'ongjin City	300,000 kw	Second-stage project (No 2 Plant) is completed in 1976. Construction of No 3 Plant (estimated output: 150,000 kw) is begun. Operation of Nos 1 and 2 plants (estimated output: 300,000 kw) is begun during Six-Year Plan. Ultimate planned capacity: 450,000 kw Domestic 50,000 kw generator is installed in No 2 plant	NS 760428 KK-33-10 RR 780506 NB-7411-6 KJ-51-35
Unbong (Hydro) power Plant	Unbong Laborers' Settlement, Chasong County, Chagang Province (where dam is located)	400,000 kw	Station is completed in 1970 (but not yet announced by Chinese side). Dam is built by North Korea; waterways and plant by China. Location of plant is (believed to be) in North Korean territory.	NS 701110 KK-16-56 KK-53-23
Changjin'gang (Hydro) power Plant	Oro County, So Hamgyong Province	397,000 kw	Facilities are outdated and major repairs are made on 4 generators in 1976 Water intake project is completed in 1978 (to increase intake water volume).	PB 760725 NS 780403
Kanggye Ch'ongnyon (Hydro) power Plant	Changgang County, Chagang Province	246,000 kw	Station is completed 29 April 1964. Project for increasing intake water volume is completed in 1978. 4,000m ³ dirt dam is built in 1979 and the reservoir water level is raised. Japanese plan before WW II was aimed at total output of 300,000 kw.	GH-64071-1 KK-50-80 NS 790329 B-40-461

(Continued on next page)

Power Plants (Con't)

Name	Location	Capacity	Remarks	Source
Pujon'gang (Hydro)power Plant	Sinhung County, So Hamgyong Province	226,000 kw		
Tongno'gang (Hydro)power Plant	Yonha-ri, Manp'o City, Chagang Province	90,000 kw		
Puryong (Hydro)power Plant	Puryong District, Ch'ongjin City	36,000 kw	No 4 waterway project is under way, damming the Obon River.	NS 781004
Kumgangsán [Diamond Mountain] (Hydro)power Plant	T'ongch'on County, Kangwon Province	14,000 kw	Station has 3 generators.	NS 770527
Naejungni (Hydro)power Plant	P'ungsan County, Yanggang Province	12,000 kw		
Taedonggang (Hydro)power Plant (Kumsong Power Plant)	Kumsong-ri, Tokch'on County, So P'yongan Province		Output is estimated at 450,000 kw. 1,200m long railway is built.	CR 770601 NS 781010
Huich'on (Hydro)power	Huich'on County, Chagang		No 2 plant is under construction.	KK-33-10
Wiwon (Hydro)power Plant	Wiwon County, Chagang Province		Station construction is reported to be under way.	KK-17-109
Pukch'ang Thermal Power Plant	Pukch'ang-up, Pukch'ang County, So P'yongan Province	1.2 million kw	Output reaches 500,000 kw under 7-year plan. Construction is completed in 1976 (with twelve 100,000 kw generators installed). As of end of 1976, all 12 generators are in operation. Major repair on No 4 generator is completed. Repair on No 7 generator is completed.	KK-33-57 NS 760428 MC 761224 NS 761201 NS 761226

(Continued on next page)

Power Plants (Con't)

Name	Location	Capacity	Remarks	Source
Pukch'ang Thermal Power Plant (con't)			2 km long pipeline for permanent disposal of ashes is put into operation in 1977. Construction project for No 2 waterway for water of industrial use gets under way in 1976. Construction of the Taedong River dam for No 2 waterway for water of industrial use is completed in 1977. Under second 7-year plan, output is projected to increase to 1.6 million kw with Soviet aid. 12 turbines installed are Soviet products of Kharkov Turbine Works; No 13 turbine is estimated to arrive in 1979; No 14 turbine in 1980. Generators are Soviet make of (?Electrosirna) Kombinat. Chief Engineer, Output Division: Chu Chae-tok Plant bulletin writer: Chong Pong-ik Plant bulletin writer: Ch'oe Kwan-ho	KK-28-119 NS 761229 NS 771128 KK-38-40 KK-51-32 MB 790114
Pyongyang Thermal Power Plant (Power Plant Where Comrade Yang Yong-kon Is Working)	Ansan 1-2-tong, P'yongch'on District, Pyongyang City	500,000 kw	Generators are delivered by Siemens, Plant has 10 generators (each 50,000 kw) Plant is built on Pongjidang hill (Ansan-tong) in P'yongch'on District. Location: Ansan 1-2-tong, P'yongch'on District Medium repair is made on No 7 Pump in 1978. No 7 boiler is repaired in 1978 Manager: Yang Yong-kon Plant newspaper editor: Yi Sok Comrade Cho Yong-ki is working here. Plant bulletin writer: Yi Sok	MB 770519 NS 780409 NS 770702 NS 780605 NB-7107-12 NS 780222 KN-6204-116 NS 771112 NS 780201 NS 780927 NS 780305 NS 740119 RR 780505 NS 770924
Unggi Thermal Power Plant	Unggi County, No Hamgyong Province	200,000 kw	Output reaches 100,000 kw in 1972. No 4 generator is installed in 1977 (inferred). Output reaches 200,000 kw in 1977.	KS 730412 NS 771213 NS 771217

(Continued on next page)

Power Plants (Con't)

Name	Location	Capacity	Remarks	Source
Unggi Thermal Plant (con't)			Plant is built with Soviet aid. Plant bulletin writer: Ho Yong-ch'ol	C-7409-8 NS 770223
Ch'ongch'on Thermal Power Plant (Namhung Thermal Power Plant)	Gang Anju District, So P'yongan Prov (formerly Namhung-ri, Pakch'on County, No P'yongan Prov)	200,000 kw	No 1 generator (50,000 kw) is installed in 1976. No 2 generator (50,000 kw) is installed in 1977. No 3 generator (50,000 kw) is installed in 1977. No 4 generator (50,000 kw) is installed in 1977. In 1976, coal-hauling facilities, waterway for water of industrial use, a railway siding, heavy oil system, and Ch'ongch'on River pumping station (at a point several hundred meters away) are completed. Construction was originally planned at Kaech'on under 6-year plan. No 4 turbine is reported in 1978 to be in operation	KK-32-22 NC 770216 NS 770601 NS 771221 NS 761113 MC 761219 NS 701110 KK-50-80
Ch'ongjin Thermal Power Plant	Kangdok-tong, Songp'yong District, Ch'ongjin City	150,000 kw	Construction is under way with Soviet aid on the compounds of the Kimch'aek Iron Works The Soviet Union delivers facilities via Najin port.	(KK-38-40 (KK-51-32 MB 790105
Namhung Thermal Power Plant	Namhung City, So Hamgyong Province		President Kim directs plant construction in 1976. President Kim speaks of construction plan	KK-31-16 H-Vol 6-208
Taebong Thermal Power Plant	Taebong County, So P'yongan Province		Construction is reported to be in progress as of 1974.	KK-07-37

(Continued on next page)

Power Plants (Con't)

Name	Location	Capacity	Remarks	Source
Haeju Thermal Power Plant	Haeju City, So Hwanghae Province		Construction is projected under second 7-year plan.	KK-48-50 (NC 780317)
Tae'an Tidal Power Plant	Tae'an City, So P'yongan Prov		President Kim makes a field inspection in March 1978.	

(End this table)

2. Iron and Steel Works and Rolling Mills

Iron ore deposits in North Korea are estimated to be approximately 1.3 billion tons. Before the world war Japan had early embarked on manufacturing iron and steel with this abundant source of iron ore along with coking coal from Manchuria and plentiful electricity. Except for the April 13 Iron Works (constructed in 1969), North Korea rebuilt iron and steel works on the former sites of Japanese works.

The biggest iron works in North Korea is the Kim Ch'aek Iron and Steel Complex. This steel complex has a 1,500m³ (No 3 blast furnace), 1,000m³ (Nos 1 and 2 blast furnaces) and in addition, 3 or 4 small-size blast furnaces. During the Six-Year Plan (1971-1976) it built, with Soviet aid, a steel mill of a 1 million ton capacity per year and a hot roll subplant, thus organizing itself into an integrated iron works. Ore comes from the Musan Iron Mine which, located (98 km from the iron works), in Musan County, is claimed to have a deposit of 1 billion tons, and during the Six-Year Plan, production reached an annual capacity of 5.5 million tons. With the completion of electrification of the Ch'ongjin-Musan railway line and of the installation of a slurry pipeline in 1975, ore is sent to the dressing plant at Kangdok.

The second largest iron works is the Hwanghae Iron and Steel Complex located in Songnim City, South Hwanghae Province. It currently has three 1,000m³ blast furnaces. This iron works twice rebuilt its old blast furnaces on its own and also expanded facilities, which are quite dated when compared with those of the Kim Ch'aek Iron and Steel Complex. Ore comes mainly from the Unnyul Mine (annual capacity: 1.2 million tons). For ore transportation, the iron works has a sea route via Kumsanp'o, and two overland routes: the mining railway line (Sohae-ri-Sugyo)/Unp'a line (Sugyo-Sariwon), and to Songnim via the P'yongbu line.

Then there is the Kangson Steel Complex which exclusively manufactures steel and rolled steel. This steel works has a 6,000-ton press shop and also has the capacity of forging large-caliber gun barrels. In addition, this steel complex is known as an exclusive plant for the manufacture of inbal kangwan (seamless steel pipe).

Because it produces very little coking coal, North Korea has set it as a national goal to introduce an iron-making method by lignite. To this end, the Ch'ongjin Steel Complex was built on the old site of the former Mitsubishi Iron Complex, and it currently has 12 rotary furnaces. In 1969, the April 13 Iron Complex was built in Taean City, South P'yongan Province which currently has four rotary furnaces. During the Six-Year Plan the 5.14 shop was constructed within the Hwanghae Iron and Steel Complex. All these plants with their rotary furnaces are producing granulated iron.

There are two exclusive alloy steel works: One is the Songjin Steel Complex constructed on the old site of the former Joshin Factory of Nippon Koshuha; and the other, the Puryong Metallurgical Complex (formerly Chosen Denki

Yakin Kabushiki Gaisha) in Puryong District, Ch'ongjin City. Among the main products of these two works are electric welding rods, alloyed tool steel, carbon tool steel, hollow steel, high-speed steel, structural alloy steel, spring steel, bearing steel, stainless steel, heat-resistant steel and acid-resistant steel.

Under the second Seven-Year Plan (1978-1984) it is projected to expand the facilities of the steel manufacturing branch which during the Six-Year Plan reached an annual capacity of 4 million tons and to build new facilities so as to bring the total annual capacity to 7.8-8 million tons. In particular, the Kim Ch'aek Iron and Steel Complex is planning to build, with Soviet aid, the first full-fledged cold roll mill in North Korea (annual capacity: 400,000 tons). In addition, it is planned to install another slurry pipeline (making a total of two pipelines) connecting the Musan Mine of Kim Ch'aek Iron and Steel Complex with the Kangdok Dressing Plant, to double track the railway line between the two points, and to increase the annual production capacity of Musan Mine to 10 million tons.

Major problems facing North Korea in its iron industry are these: In addition to its backwardness in technology, it has to import coking coal from China and the Soviet Union, paying for it in foreign currencies, because North Korea has no domestic source of it; and the ratio of coking coal is as high as 0.7, because of the low quality of iron ore as a whole, ranging between 35 percent and 50 percent.

By the way, in the Six-Year Plan there were two target items listed: research in electric iron manufacture and the construction of an electric iron works. But there has been no further announcement at all as to what has happened to them.

Iron and Steel Works and Rolling Mills

Name	Location	Products	Remarks	Source
Kim Ch'ae Iron and Steel Complex (Cont'd)	Kangdok-tong, Songp'yong District, Ch'ongjin City	Pig iron, sponge iron, steel, rolled steel	<p>During 6-year plan, Nos 1 and 2 blast furnaces are each enlarged to 1,000m³. No 3 blast furnace (1,500m³) is completed in 1975.</p> <p>During 6-year plan, continuous sintering furnace with a 3 million ton capacity is completed.</p> <p>During 6-year plan, Nos 3 and 4 coking furnaces are installed.</p> <p>During 6-year plan, two 100 ton rotary furnaces are installed.</p> <p>During 6-year plan, hot roll plant (annual capacity: 1 million tons) with Model 1700 hot roller is completed with Soviet aid.</p> <p>Slurry pipeline (annual capacity: 2.5 million tons) between Musan Mine and Kangdok Dressing Plant (98km) is completed in 1975.</p> <p>Electrification of railway between Ch'ongjin and Musan is completed in 1977.</p> <p>Employee housing for 10,000 families is built in South Ch'ongjin.</p> <p>Installation of another slurry pipeline between Musan Mine and Kangdok Dressing Plant is projected under second 7-year plan.</p> <p>Double-tracking of the railway line between Komusan and Musan is projected under second 7-year plan.</p> <p>Construction (on Nomp'o Plateau) of a cold roll subplant with annual capacity of 400,000 tons is projected under second 7-year plan (currently in progress).</p> <p>Plan for construction of No 5 coking furnace is reported.</p>	<p>KK-44-47</p> <p>KK-05-68</p> <p>KK-06-37</p> <p>NS 771217</p> <p>KK-23-23</p> <p>KK-28-77</p> <p>KK-24-18</p> <p>KK-18-44</p> <p>KK-32-22</p> <p>KK-33-58</p> <p>KK-33-10</p> <p>KK-44-45</p> <p>KK-33-58</p> <p>KK-51-33</p> <p>CR-7607-32</p>

(Continued on next page)

Iron and Steel Works and Rolling Mills (Continued)

Name	Location	Products	Remarks	Source
Kim Ch'aek Iron and Steel Complex (Cont'd)			In 1976 First Vice President Kim Il interviews Soviet technicians who are helping the construction. In 1978, No 1 blast furnace is repaired (medium repair). First Deputy Manager: Ch'oe Hyon-ki Chief Engineer: Ch'oe Hyon-ki Deputy Chief Engineer: Kim Ki-ch'on	KK-24-16 NS 790110 NS 770429 MC 771218 JR KN-6305-24
Hwanghae Iron and Steel Complex	Oryu-tong, Songnim City, No Hwanghae Province	Pig iron, granulated iron, steel, rolled steel	The works has a thin plate roller in 1963. Number of employees as of 1963: 17,000 Medium blast furnaces (plural) are built in 1964. Blooming shop with annual capacity of 400,000 tons is completed in 1964. No 6 open-hearth furnace is installed in 1965; at present, there are 6 units (of which No 2 is a 200 ton open-hearth furnace). Reserve work force is reported as 5,000 men in 1973. During 6-year plan, 3 blast furnaces with annual capacity of 250,000 tons are each enlarged to 1,000m ³ . During 6-year plan, construction of 5.14 shop (granulated iron) and reduced lump ore shop is completed. Sintering plant is completed during 6-year plan. Manager: Yi Pa-kwi' [Japanese phonetic] Director, Education Dept., party committee: Pang Yong-nam Works bulletin writer: Ko Yong-pong	D-7010-77 NB-7408-6 NB-7408-6 NB-7408-6 NS 760330 NC 770805 KK-44-46 KK-44-46 KK-16-46 NS 720401 RP /0608 NS 780903 NS 780321

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Iron and Steel Works and Rolling Mills (Continued)

Name	Location	Products	Remarks	Source
Kangson Iron and Steel Complex	Tae'an City, So P'yongan Prov (formerly Kangson Laborers' Settlement, Kangso County)	Rolled steel, alloy steel, tool steel, steel wire rope, steel pipe, welding rod, seamless steel pipe, casting, electrode, cement, granulated iron	Wire rolling shop with annual capacity of 300,000 tons is completed in 1963.	KN-6304-24
			6,000 ton press shop is completed in 1970.	NS 700602
			12m universal planer is manufactured in 1975.	NS 750918
			No 2 steel shop under 6-year plan is completed.	KK-16-46
			Current annual rolling capacity: 700,000 tons	NS 771124
			At present the works has in excess of 7 electric furnaces.	NS 780203
			The works has Namp'o Electrode Plant under its umbrella.	NS 770216
			Manager: Ch'a Hui-ch'ung	PR 790317
			Manager: Pak In-su (as of 1974)	NS 741231
			Superintendent, No 1 Seamless Steel Pipe Shop: Yang Ch'il-yop	NS 771216
Kangson Iron and Steel Complex (April 13 Iron Works)	Tae'an City, So P'yongan Prov	Granulated iron, blister steel	Chief Engineer, Production Department: Kim Tong-hun	NS 751207
			Responsible Secretary, Party Committee: Kim Chu-ch'on	NS 751207
			Plant bulletin writer: Yi Tong-ch'un	NS 770518
			At present the works has 4 rotary furnaces.	KN-7604-3
			Construction is completed during 6-year plan.	KK-16-46
Ch'ongjin Steel Works (March 10 Iron Works)	Ch'ongjin City	Granulated iron, steel, rolled steel	At present the works has 12 rotary furnaces.	NS 760817
			No 3 steel shop is completed under 6-year plan.	KK-16-46
			Each rotary furnace, 3.6m in diameter, 60m in length, tilted 2 degrees, has daily capacity of 80-100 tons.	E-6004-108
			Director, (children's) nursery: Ki Kil-son	NS 770621
			Plant bulletin writer: Kim Ch'ang-kyu	NS 780212

(Continued on next page)

Iron and Steel Works and Rolling Mills (Continued)

Name	Location	Products	Remarks	Source
Songjin Steel Complex	Kimch'aek City,	Rolled steel,	No 2 medium rolling shop (93,000m ² , annual capacity 80,000-100,000 tons) is completed in 1963.	KN-6304-90
	No Hamgyong Prov	alloy steel	At present the works has 13 electric furnaces.	NS 760801
			At present the works has 280mm, 350mm, and 450mm rollers.	NS 751222
			At present the works has a 650mm blooming mill.	NS 780417
Puryong Metallurgical Works	Puryong District,	Ferro-chromium, ferro-silicon, alloy iron	At present the works has 14 hammers. Plant bulletin writer: Kim Sok-pong	NS 760104
	Ch'ongjin City		Plant bulletin writer: Ho Yong-ch'ol	NS 780331
			The works has electric furnaces up to No 8.	NS 770806
			The works produces (?self-inflammable) electrode in 1978.	NS 780730
Taedonggang Iron Works Electric	Lower reaches of the Taedong River		Construction is being planned.	NS 781016
			Construction is being planned.	NS 740215
Iron Works in Sobu District				NS 740226

[End this table]

3. Steel Factories, and Iron and Steel Processing Plants

In North Korea, there are, in addition to the iron and steel works mentioned in preceding item 2, what is called steel factories, and iron and steel processing plants, all medium or small sized. These factories belong to the category of central factories, not local factories, and their sizes are far smaller than the regular iron works or steel works. In Japan, they would be called open-hearth electric furnace makers or casting plants, using scrap iron as raw material. The larger factories among them are Pyongyang Steel Factory and the Ch'ongjin Cast Iron Pipe Factory which specializes in the manufacture of cast iron pipe.

Steel Mills

Name	Location	Remarks	Source
Pyongyang Steel Factory	Son'gyo District Pyongyang City	The factory has steel shop, engineering and power shop, rolling shop, casting shop, elongation shop, crude material transport shop.	KK-19-34
Munch'on Steel Factory	Munch'on County, Kangwon Province		
Ch'ongjin Cast Iron Pipe Factory	Ch'ongjin City	The factory has two blast furnace stoves and a briquet making kiln.	NS 760311

4. Smelteries

In North Korea there are deposits of various kinds of nonferrous minerals throughout the Mach'ollyong mountain range in the east, and South and North P'yongan provinces and South and North Hwanghae provinces in the west. Major minerals among them are tungsten, molybdenum, manganese, nickel, gold, silver, copper, lead, zinc and magnesite.

Before the world war Japan had built Hungnam Smeltery, Munp'yong Smeltery, Namp'o Smeltery and Haeju Smeltery to tap these mineral resources. These smelteries have since been rehabilitated (it took nearly 20 years to rehabilitate Haeju Smeltery), augmented and expanded.

The construction of Tanch'on Smeltery got under way during the Six-Year Plan (1971-1976) but is yet to be completed. Still to be completed also is the construction of Pukch'ang Aluminum Plant which was announced in 1961. Thus the construction of smelteries seems to be falling way behind.

What is characteristic of North Korea's smelteries is that they are primarily smelting lead, zinc and copper, and are producing gold, silver and other rare metals in the process. In addition, they smelt some nickel and molybdenum. At present they have to depend completely on imports for tin and aluminum. Current annual production is estimated at 200,000 tons for lead and zinc and 100,000 tons for copper, and some of them are being exported to Japan.

Before the world war Japan had in Sinuiju the Seisen Kagaku Kogyo Kabushiki Gaisha and Kokusan Keikinzoku Kabushiki Gaisha (producing aluminum from nepheline). After the world war North Korea built Yongamp'o Smeltery here, but it is not known if the smeltery is in operation at present.

Smelteries

Name	Location	Products	Remarks	Source
Namp'o Smeltery	Namp'o City, So P'yongan Prov	Electric copper, zinc, chalcopyrite gold, silver	In 1962, rolling subplant (annual capacity: 12,000 tons) is constructed with Czechoslovak aid. Smokestack is 600 feet high. Superintendent, Fertilizer Subplant: Hong Ch'on-kwon	NB-7410-4 (NS 770303) GH-6409-8 NS 780127
Hungnam Smeltery	Hungnam District, Hamhung City, So Hamgyong Prov	Electric copper, lead, precious metal (silver), nickel	Automation of smelting furnace is completed in 1976. Smeltery bulletin writer: Kim Sang-cho Smeltery bulletin writer/correspondent: Ko Hyong-ch'ang	NS 760209 NS 780413 NS 770202
Munp'yong Smeltery	Munp'yong Laborers' Settlement, Munch'on County, Kangwon Prov	Lead, zinc, crude copper, electric copper, chalcopyrite	Sulfur plant is completed in 1976. Innovation is brought about by Comrade Kim Yong-man's shop in 1976.	NS 760428 MC 760721
Haeju Smeltery	Haeju City, So Hwanghae Prov	Copper	No 3 sulfur shop is completed in 1975. Manager: Yi Sang-kak Chief Engineer: Yi Ch'ol-chu Smeltery bulletin writer: Won U-yon	NS 780127 NS 751207 NS 741104 NS 770117
Pukch'ang Aluminum Plant	Pukch'ang County, So Hwanghae Prov	Aluminum	Construction is in progress for annual production capacity of 23,000 tons with Soviet aid (plant facilities being produced by a machine works in Irkutsk). Completion is projected during 7-year plan.	KK-51-32
Tanch'on Smeltery	Tanch'on County, So Hamghong Prov	Copper	Completion is projected during 7-year plan.	KK-44-47 KK-44-47
Pyongyang Nonferrous Metal Plant	Pyongyang City	Electric copper	The plant refines scrap copper.	NS 770722

[End this table]

II. Machinery Industry

5. Machine Works (Comprehensive)

In North Korea there are many factories called machine works. As the machine industry is the backbone of the munitions industry, North Korea has made an input of great effort into it and as a result, it may be said, the machine industry is an area which is far more developed than other industries.

The largest among the machine works is the Yongsong Machine Works in Hamhung City, South Hamgyong Province. As shown in the following table, this machine works is producing large-size machines and equipment; and in particular, the 6,000 ton press produced in 1969 is capable of forging large-caliber gun barrels, and it is believed the machine works is contributing to North Korea's production of large-caliber guns. At present, the 6,000 ton press is installed at the Kangson Combined Steel Works. In addition, this machine works built a large-size machine tool shop in 1977 and is believed to be capable of producing lathes larger in size than Huich'on Model 3 Lathe and Kusong Model 3 Lathe, North Korea's linear production lathes. Nakwon Machine Works is the largest plant in North Korea for the production of excavators. Pukchung Machine Works is the largest plant in North Korea for the production of diesel engines, the largest diesel engine being of 3,000 hp. But the production of 3,000 hp diesel engine at the Pukchung Machine Works is still in an experimental stage. Upon completion of its construction, as scheduled under the second Seven-Year Plan (1978-1984), Taean Heavy Machine Works will become the largest heavy machine works in North Korea. The construction is being carried out with Soviet aid.

Among other machine works there are none worth mentioning except for Wonsan Motor Works, known for its exclusive manufacture of motors; and the September 28 Factory which may be described as a comparatively large-size factory.

General Machine Works

Name	Location	Products	Remarks	Source
Yongsong Machine Works (June 15 Factory)	Yongsong District, Hamhung City, So Hamgyong Prov	Large-size press, lathe, turbine, compressor, other large-size plant facilities	6,000 ton press is produced in 1969.	GH-7003-1A
			12m ³ high pressure centrifugal compressor is produced.	KS 740912
			18m turning lathe is produced in 1975.	GH-7512-10
			12m planer is produced in 1975.	NS 751208
			50,000 kw thermal turbine is produced in 1975.	NS 751020
			120,000m ³ /h high pressure fan is produced in 1975.	NS 750803
			Hydraulic turbine (for use in 400m head) is produced in 1975.	KK-15-40
			500mm roller is produced in 1975.	NS 750304
			June 10 subplant is completed in 1975.	NS 750304
			12-bit drill press is produced during 6-year plan.	NS 790331
Nagwon Machine Works (Factory Where Comrade Kim Kyong-myong Is Working)	Nagwon-tong, Sinuiju City, No P'yongan Prov	Large-size excavator, large-size crane, pump	Large-size machine tool shops (plural) are completed in 1977.	NS 771214
			Number of employees as of 1963: 6,000	D-7010-96
			President Kim gives his on-the-spot guidance on 15 June 1967.	NS 701111
			Plant bulletin writer: Yi Chong-ku	NS 770326
			10m ³ excavator is produced in 1975.	NS 751208
			Large-size continuous excavator is produced in 1975.	NS 751102
			60 ton self-propelled crane is produced in 1975.	NS 751005
			Hydraulic excavator is produced in 1977.	NS 790210
			250 ton hydraulic press is produced in 1977.	NS 771030
			The works has the 3.8 sewing machine subplant under its umbrella.	GH-7306-17
			Deputy Manager: Yi Hyong-nok	NS 761118
			Chief Engineer: Kim Pong-kyu	MC 780104
			Plant bulletin writer: Correspondent Han Chong-pae	NS 770301

[Continued on next page]

General Machine Works (Continued)

Name	Location	Products	Remarks	Source
August 8 Factory (Pukchung Machine Works)	Pukchung Laborers' Settlement, Yongch'on County, No P'yongan Province	Large-size diesel engine, electric motor, freezer, tractor accessories, fans, refrigerator	During 6-year plan, the works produces high speed 1,500 HP, medium speed 2,500 HP ("Kumsong" model diesel locomotive), and high speed 3,000 HP (for marine use) diesel engines. In 1979, the works produces 350mm roller and pipe roller, and effects the forging of diesel engine crankshaft. Plan is under way to turn the machine works into a factory producing plant facilities.	GH-7607-23 NS 741026 KK-39-58 NS 790329 NS 781115
Sinch'on Machine Works	Sinch'on County, So Hwanghe Province		The machine works is expanded 10 times in 1975. Plan is reported in 1975 to produce 1,000 ton press.	NS 750628 NS 751002
May 18 Factory (Munch'on Machine Works)	Munch'on-up, Munch'on County, Kangwon Province	Vale	A new melting method is adopted in 1978.	NS 780411
Kaech'on Machine Works	Kaech'on County, So P'yongan Province			
Yongamp'o Machine Works	Yongamp'o Laborers' Settlement, Yongch'on County, No P'yong Province		Plant bulletin writer: Yi Tu-song	NS 771019
Wonsan Machine Works	Wonsan City, Kangwon Province	Machine tool	Artificial rainmaker is produced. Plant bulletin writer: Chin Kuk-chong	RR 780614 NS 720314
Sinwon Machine Works	Sinwon County, So Hwanghae Province	Pump	200 artificial rainmakers are produced in 1977.	NS 770622
P'yongsong Machine Works	P'yongsong City, So P'yongan Province		Plant bulletin writer: Kang Sok-hui	NS 780709

[Continued on next page]

General Machine Works (Continued)

Name	Location	Products	Remarks	Source
Haeju Comprehensive Machine Works	Haeju City, So Heange Prov			
Sariwon Machine Works	Sariwon City, No Hwanghae Prov	Rainmaker	1,050 rainmakers are produced in 1978.	NS 790202
Kaesong Comprehensive Machine Works	Kaesong City			
December 5 Factory	Hamhung City, So Hamgyong Prov	Crane		
Factory Where Comrade Chon Yong-pom Is Working (Mor'an Motor Works)	Wonsan City, Kangwon Prov	Motor	Manager: Chon Yong-pom	NS 780127
Kangson Fishing Machine Works	Tae'an City, So P'yongan Prov		Plantbulletin writer: Kim Yong-ki	NS 790117
March 13 Fishing Machine Works	Kyongsong County, Ch'ongjin City		President Kim gives his on-the-spot guidance on 13 March 1959.	NS 780323
May 8 Forestry Machine Works	Hyesan City, Yanggang Prov	Forestry tractor, logging machine, chain saw	Forestry tractor model "Paektusan" is reported in 1979 to be currently in production. Plant bulletin writer: Kim Yong-hwan Plant bulletin writer: Kim Pyong-nin	GH-7903-25 NS 781017 NS 790413
Hydrometeorological Machine Works		Thermometer	Quantity production of thermometers is reported in 1979.	NS 790129

[Continued on next page]

General Machine Works (Continued)

Name	Location	Products	Remarks	Source
Haeju Comprehensive Machine Works	Haeju City, So Hwanghae Prov		Vinyl sheets are produced in 1978.	NS 780319
Namp'o Commercial Machine Works	Namp'o City, So P'yongan Prov			
Pukch'ong Orchard Machine Works	Pukch'ong County, So Hamgyong Prov	Sprayer		
Yangch'aek Machine Works	Yangch'aek Laborers' Settlement, Pihyon County, No P'yongan Prov		Construction plan is announced in 1971 (but not yet undertaken).	NS 710101
Tae'an Heavy Machine Works	Tae'an City, So P'yongan Prov	Large-size plant facilities	Production of large-size generators, coal mining facilities, excavating facilities, chemical facilities, cement facilities, and large-size reduction gear is planned. Construction of compressor room, oxygen generating room, substation, test room, No 2 integrated processing shop, and No 1 can-making shop is planned. First Deputy Director, Construction Dept., Communist Party of the USSR, inspects the construction site in 1978. Commencement of operation is set for 10 October 1979. Production is scheduled under the second 7-year plan for 100,000 kw turbine and generator.	CL-7810-06 NS 780711 KK-54-44 NC 780324 KK-44-48

[Continued on next page]

General Machine Works (Continued)

Name	Location	Products	Remarks	Source
September 28 Factory (formerly Anju Coupling Farm Machine Works)	Anju-up, Anju County, So P'yongan Prov	Pump, mining equipment, plant facilities	Decision is made in 1976 to produce 1,570 irrigation pumps in half a year. Thermal power plant facilities are produced in 1977. 350mm wire roller is produced in 1978. Scores of thousands of guardrails are produced in 1978 for the Pyongyang- Wonsan Freeway.	NS 761024 NS 771204 NS 781014 NS 781014
Myohyangsan Medical Instrument Factory	Myangsan County, No P'yongan Prov			
Kaesong Disabled Veterans Factory for Medical Instruments	Kaesong City			
Hamhung Disabled Veterans Factory for Medical Instruments	Hamhung City, So Hamgyong Prov			
Pyongyang Textile Machine Works (Korean- Cuban Friendship Textile Machine Works)	Pyongyang City	Needles, including weaving needles	One 60-ton press is produced in 1979. Plant bulletin writer: An Son-hyon	NS 790301 NS 780806

(Continued on next page)

General Machine Works (Continued)

Name	Location	Products	Remarks	Source
Sinuiju Textile Machine Works	Sinuiju City, No P'yongan Prov		Accessories for bearings are produced. Accessories for rainmakers are produced in 1973. 300-ton friction press is produced in 1973. Plant bulletin writer: Yi Chi-to	NS 780807 NS 781125 NS 780807 NS 780829 NS 780808
Sariwon Textile Machine Works	Sariwon City, No Hwanghae Prov		Containers are produced in 1978.	
Pyongyang Comprehen- sive Textile Instruments Factory	Pyongyang City			
Hamhung Factory for Accessories of Textile Mill Facilities	Hamhung City, So Hamgyong Prov			
Pyongyang Shoemaking Machine Works	Pyongyang City		Containers are produced in 1978.	NS 780808
Machine Works Where Comrade Kim Sung-cho Is Working	Pukwon Laborers' Settlement, Kaech'on County, So P'yongan Prov		This is a munitions factory (engine repair). This machine works has connections with military aircraft.	KK-25-76 KK-57-57
Factory Where Comrade Yi Won-kwan Is Working		Large-size engine for "Chaju" model truck	This factory has Nos 2 and 3 shops for "Chaju" model truck and Ch'ongnyon Engine Shop. This factory is cited by the state in 1977.	NS 700602 KK-32-43

[End this table]

6. Machine Tool Works

North Korea's machine tool works have a long history behind them. During the Korean War, the present Huich'on Machine Tool Works continued production activities, digging a hideout out of the mountain in Huich'on City, Chagang Province, an episode recounted to this day.

The machine tool is indispensable to the production of guns and is the machine to manufacture machines. For this reason, President Kim has been making an input of great effort into developing the Huich'on Machine Tool Works and Kusong Machine Tool Works; and Huich'on No 3 Lathe and Kusong No 3 Lathe currently in production represent, it may be said, fruition of this effort.

The production of machine tools reached the 30,000 unit level during the Six-Year Plan (1971-1976) and is projected to reach the 50,000 unit level under the second Seven-Year Plan. But as neither the basis of computation for machine tools nor the number of units by the product is known, it is difficult to ascertain the actual state of production.

Machine Tool Works

Name	Location	Products	Remarks	Source
Huich'on Machine Tool Works	Huich'on City, Chagang Prov	Regular lathe, semi-hydraulic lathe, vertical lathe, grinder, hobbing machine	150m belt conveyor is produced in 1974. Plant bulletin writer: Kwon Pyong-son	KK-07-36 NS 780424
April 3 Factory (Kusong Machine Tool Works)	Kusong City, No P'yongan Prov	Regular lathe, numerical control lathe, automatic lathe	Plant bulletin writer: Kim Sung-pu Plant bulletin writer: Yi Yong-sik	
Man'gyongdae Machine Tool Works	Man'gyongdae District, Pyongyang City	Bench lathe, (?shearing) machine		NS 771208 NS 780411
Pyongyang Machine Tool Works	Pyongyang City	Grinder, precision tool, measuring instrument, evulsion tool	Chief Engineer: Kim Ku-ha	JR
Ch'ongjin Machine Tool Works	Ch'ongjin City		This work is reported in 1974 as one that has scored outstanding achievement. Plant bulletin writer: Chi Su-yon	KK-07-36 NS 790513
Hamhung Machine Tool Works	Hamhung City, So Hamgyong Prov	Press	630 ton press is produced in 1977.	NS 770927
July 13 Factory (Unsan Tool Factory)	Unsan County, No P'yongan Prov	Precision tool, measuring instrument, evulsion tool	Plant bulletin writer: Kim Kye-ch'ik	NS 780216

[Continued on next page]

Machine Tool Works (ctd)				
Name	Location	Products	Remarks	Source
Man'gyongdae Tool	Man'gyongdae District,	Tool		
Factory	Pyongyang City			
Kimch'aek Pneumatic Machine	Kimch'aek City, No Hamgyong Prov	Pneumatic machine		
Works				
[End this table]				

7. Precision Machine Works

North Korea's definition of precision machine is not clear but under this heading we will take up what North Korea calls precision machine works and timepiece factories.

The largest among the precision machine works is the February 26 Factory. This factory made rapid strides during the Six-Year Plan (1971-1976) and is known as the largest engine parts factory in North Korea, also as the only factory in North Korea that produces forklifts. It is believed that the technical standards of this factory are comparatively high and that the factory will develop further.

As to timepieces, North Korea used to produce only alarm clocks and wall clocks, and its earnest wish, a wrist watch factory, projected under the Seven-Year Plan (1961-1970), was completed in 1979. This wrist watch factory is called Moranbong Watch Factory, but details as to its production volume and production process have not been revealed.

Precision Machine Works

Name	Location	Products	Remarks	Source
February 26 Factory (Huich'on Precision Machine Works) (Factory Where Comrade Paek Ch'ang- t'ock Is Working)	Huich'on City, Chagang Prov	Hydraulic machine, piston, sprayer, rock drill, forklift, high-speed bearing, truck parts, tractor parts	Hydraulic machine shop is completed during 7-year plan. Automated processing line of pistons for "Sungni" model trucks is completed in 1972. Number of employees as of 1961: 2,900 Battery-operated, and "Chige" 2000 model, forklifts are currently produced. Production is reported in 1978 of hydraulic traveling equipment, high pressure gear pump, and speed regulator. Chief Engineer: Kim Ch'ang-kun Plant bulletin writer: Ch'on Myong-suk Plant bulletin writer: Yim Chong-pong (See item 8 Bearing Plants) Manager: Hong Song-mu (as of 1972) Chief Engineer: Kim Hung-yong Plant bulletin writer: Yi Ch'ung-nam	KK-44-37 NS 721028 G-6109-273 KK-57-54 KK-57-54 CL-7808-37 NS 781120 NS 780402 NS 780406 NS 780406 NS 770728
Pyongyang Precision Machine Works (March 25 Factory)	Yongsong District, Pyong- g City	Sewing machine, clock, steelyard, bearing	Precision cold rolling machine is produced in 1977.	NS 770905
Factory Where Comrade Kim Chong-ul Is Working		Automobile parts		
Pyongyang Weights and Measures Factory	Pyongyang City	Steelyard, weighing machine		
Wonsan Steelyard Repair Factory			The factory sends gift to the National Meeting of Educational Activists.	NS 781002
Pyongyang Measuring Instruments Factory	Pyongyang City			

(Continued on next page)

Precision Machine Works (ctd)

Name	Location	Products	Remarks	Source
Disabled Veterans Factory for Measuring Instruments			The factory is under the jurisdiction of General Bureau of Procurement and Food Administration (Administration Council).	NS 781122
Kaesong Clock Production Cooperative	Kaesong City	Table clock, wall clock		
Moranbong Watch Factory		Wrist watch	Construction plan is reported for a second time in 1977. Construction is completed in 1979.	KK-36-07 GH-7902-24

[End this table]

8. Bearing Plants

North Korea had been unable to produce quality bearings. Bearings used to be produced mainly by the March 25 Factory, but during the Six-Year Plan (1971-1976) a new factory with an annual production capacity of 13 million bearings was built with Soviet aid in Chongju County, North P'yongan Province. This new factory is believed to be producing all kinds of bearings including special bearings. This new factory attracts attention as a factory readily convertible into a munitions factory. Simply referred to as the October 30 Factory, the formal name of the factory has not been released.

There are no other exclusive bearing factories except that automobile parts factories and general machine works are producing bearings in small quantities. The situation is such that frequently, rebuilt bearings have to be used.

Bearing Plants

Name	Location	Products	Remarks	Source
October 30 Factory	Chongju County, No P'yongan Prov	Various kinds of bearings, special bearings	Construction is completed in 1974. The factory is built with Soviet aid (annual production capacity: 13 million bearings). The factory produces bearings for Ch'ongnyon Chemical Plant. Construction is planned in 1978 of a casting and cast steel shop.	KK-08-06 KK-38-46 NS 770809 KK-51-32
March 25 Factory (Pyongyang Precision Machine Works) (Factory Where Comrade Kim Hyong- sun is Working)	Pyongyang City	Bearings for automobile and truck, insulated wire	Bearings are produced for rolling machines Factory bulletin writer: Cho Kun-ho	NS 771117 NS 781211
February 26 Factory (Huich'on Precision Machine Works)	Huich'on City, Chagang Province	High-speed bearings	(See item 7 Precision Machine Works) Factory bulletin writer: Ch'on Myong-suk	NS 781120 NS 781120

[End this table]

9. Construction Equipment Factories

North Korea has several factories called construction equipment factories but there are many ambiguous points exactly as to what kinds of equipment they are producing. Anyway, it is generally thought that the factories are producing mechanical equipment needed in construction projects.

There is the Man'gyongdae Bulldozer Factory, a large-size factory exclusively producing bulldozers. This factory is located in Man'gyongdae District, Pyongyang City. Prior to producing bulldozers, this factory was called Man'gyong Construction Equipment Factory but subsequently underwent repeated name changes and has since January 1979 been called Man'gyongdae Bulldozer Factory. This bespeaks that the factory has developed into a factory exclusively producing bulldozers. The "Man'gyong" model bulldozer currently being produced by this factory has 300 hp. This is the "Man'gyongdae" model 300 hp bulldozer originally produced on a trial basis in 1970 by the Kiyang Tractor Factory (now Kumsong Tractor Factory) put into quantity production. This bulldozer attracts attention because it can also be put to military use. The production of this model bulldozer under the second Seven-Year Plan (1978-1984) is projected to reach six times the production volume during the Six-Year Plan (1971-1976). As currently it is only the Man'gyongdae Bulldozer Factory which produces this model bulldozer, it is believed that the factory will be expanded on a large scale in the future.

In addition, there is the Pyongyang Construction Equipment Factory which produces elevators and hydraulic equipment. At present, this factory is called the August 5 Factory. As a factory exclusively producing elevators, there is the Pyongyang Elevator Factory, but it is believed that this is the elevator department of the Pyongyang Construction Equipment Factory which has become independent and that the elevator factory is located in the same compound.

Construction Equipment Factories

Name	Location	Products	Remarks	Source
Man'gyongdae Bulldozer Factory (Man'gyongdae Construction Equipment Factory) Factory Where Comrade Chong Myong-ch'ol Is Working (Factory Where Comrade Kye Hyong-sun Is Working) (Factory Where Comrade Mun Kwang-hyok Is Working	Man'gyongdae District, Pyongyang City	300 HP bulldozer	Assembly production of "Man'gyong" model bulldozer (300 HP) begins. Production of new "Man'gyong" model (300 HP) begins. The factory becomes one exclusively producing bulldozers.	NS 741229 KX-43-74 MC 790125
Pyongyang Construction Equipment Factory	Son'gyo District, Pyongyang City	Elevator, hydraulic equipment	The factory is reported in 1978 to be a construction equipment factory in Pyongyang City.	NS 780902
Pyongyang Elevator Factory (August 5 Factory)	Son'gyo District, Pyongyang City	Chief Engineer: Paek Pyong-kwan Deputy Chief Engineer: Kim Chong-won		NS 770128 NS 770203
Hyesan Construction Yanggan Prov Equipment Factory	Hyesan City,			
Pyongyang Elevator Factory	Son'gyo District, Pyongyang City	Elevator	The factory is reported to be located in Son'gyo District	CL-7806-40
Ch'ongjin Comprehensive Construction Equipment Repair Factory	Ch'ongjin City		Director, Planning Division: Yi Kyong-ku Factory bulletin writer: Kim Yong-kil	NS 771114 NS 790305

[End this table]

10. Mining Equipment Factories

North Korea abounds in mineral and coal mines, and its needs for mining equipment are comparatively high. For this reason, a system has been instituted for producing the necessary mining equipment in the very areas where mineral and coal mines are concentrated.

What is characteristic of the mining equipment factories is that many of them are comparatively large-size factories and that the variety of products is diverse. For example, Ch'aryon'gwan Mining Equipment Factory is producing 25 ton class electric cars. This class electric cars used to be produced by the Kim Chong-t'ae Electric Locomotive Works, the only such electric locomotive works in North Korea, and the fact that the electric cars are being produced by a mere mining equipment factory means that the factory must possess the necessary plant facilities. In addition, Pyongyang Coal Mining Equipment Factory is producing hydraulic pit props. Since hydraulic equipment calls for high precision, it may be assumed that this is a factory of a high technical standard. Again, it may be worthy of attention that the May 10 Factory is producing integrated tunneling machines.

As mentioned above, possessed of high technical standards and equipped with outstanding plant facilities, the mining equipment factories in North Korea may be considered as excellent forging factories, and moreover, as most of them are located in the mountains, deployed in such a way as to be able to carry on production activities even on a wartime footing, it may be assumed that they are readily convertible to munitions factories.

Mining Equipment Factories

Name	Location	Products	Remarks	Source
Ch'aryon'wan Mining Equipment Factory (August 26 Factory)	Tongnim County, No P'yongan Prov	Mining electric car, loader	Mining electric car (30 km/h) is produced in 1975. "280" model loader is produced in 1975. 3,500 units of corn humus pot making machines and 1,450 units of rice-planting machines are produced in 1976.	KN-7603-33 NS 751007 NS 760318
Kusong Mining Equipment Factory (August 28 Factory)	Kusong City, No P'yongan Prov	Test drill, excavator, rock drill, winding machine, compressor	Director, Factory Kindergarten: Pak Chong-sun Factory bulletin writer: Kim Chun Factory bulletin writer: Chang T'ae-sun	NC 781209 NS 780423 NS 780717
Sinuiju Mining Equipment Factory (August 9 Factory)	Yongch'on County, No P'yongan Prov		New model excavator is produced in 1976. Factory bulletin writer: Kim Ch'on-kil	NS 761227 NS 781219
Tanch'on Mining Equipment Factory (April 28 Factory)	Tanch'on County, So Hamgyong Prov	Loader, 4m planer, 100m boring machine, cylindrical grinder, dual milling cutter, (integrated cylinder processing machine)		
Sariwon Mining Equipment Factory	Sariwon City, No Hwanghae Prov		8 ton class coal feeder is produced in 1978. Rainmaker is produced in 1978.	NS 780603 NS 780529

(Continued on next page)

Mining Equipment Factories (Continued)

Name	Location	Products	Remarks	Source
Pyongyang Coal Mining Equipment Factory (March 30 Factory) (Factory Where Comrade Chong Ch'ung-sop Is Working)	Pyongyang City	Winding machine, coal car, conveyor, hydraulic pit prop	Valve is produced. 100 ton class truck is produced in 1975. The factory has a 1,000 ton press. The factory has a hydraulic processing shop. The factory begins using its formal name in March 1978 Manager: Kim Nak-tu Factory bulletin writer: Kang Pom	NS 761227 KX-10-36 NS 781020 NS 781020 NS 780307 NS 740103 NS 781130
May 10 Factory (Nanam Coal Mining Equipment Factory)	Nanam District, Ch'ongjin City	Large wind- ing machine, air blower, conveyor, crusher, blast furnace, cutting machine	Integrated excavator and drum cutter are produced. Belt conveyor is produced in 1977 for Kondok Mine. Factory bulletin writer: An Pyong-mo	GH-7408-15 NS 770914 NS 770708
Hoeryong Coal Mining Equipment Factory	Hoeryong County, No Hamgyong Prov	Coal car, winding machine, crane, conveyor, pit prop retriever, cylindrical iron pit prop	The factory produces in 1977 equipment for the press and die or stamp forging system for a score of products under linear production. Factory bulletin writer: U Hyong-ki Factory bulletin writer: Pak Kyong-ho	NS 771110 NS 781008 NS 790310
Sunch'on Coal Mining Equipment Factory	Sunch'on County, So P'yongan Prov	Coal car, coal feeding machine, cableway facilities, conveyor	The factory produces large-size press in 1976. The factory has railway siding to factory. Production of coal car with self-emptying mechanism is reported in 1979. Factory bulletin writer: Kim Man-ung	NS 760314 NS 770106 NS 790205 NS 780619

(Continued on next page)

Mining Equipment Factories (Continued)

Name	Location	Products	Remarks	Source
Tokch'on Coal Mining Equipment Factory	Tokch'on County, So P'yongan Prov	Coal car, loader, excavator	Pneumatic motor is produced. The factory comes under the umbrella of Tokch'on District Combined Coal Mining Enterprise	NS 760314 NS 780323
Songnam Coal Mining Equipment Factory	Songnam Laborers' Settlement, Pukch'ang County, So P'yongan Prov	Iron pit props	Factory bulletin writer: Kong Pyong-nyong	NS 781123
Unsan Coal Mining Equipment Factory	Unsan County, So P'yongan Prov			
Chonch'on Rock Drill Factory	Chonch'on County, Chagang Prov	Rock drill	Factory bulletin writer: Kim Ik-hwa	NS 781006
Changnim Survey Instrument Factory	Songch'on County, So P'yongan Prov	Survey instrument, test drill	The factory is under the jurisdiction of General Bureau of Geology (now Department of Development of Resources).	NS 760402
Ch'olsan Electrical Equipment Factory	Ch'olsan County, No P'yongan Prov	Mining electrical facilities, electric motor, small generator, welding machine	The factory is under the jurisdiction of General Bureau of Machine Industry, Mining Industry Committee, State Administration Council. Iron plate cutting machine is produced in 1977	NS 770725 NS 770827
Songnam Iron Strut Factory	Songnam Laborers' Settlement, Pukch'ang County, So P'yongan Prov	Iron strut	The factory re-emerges in 1978	NS 780305
Kaech'on Survey Instrument Repair Factory	Kaech'on County, So P'yongan Prov		The existence of the factory is confirmed in 1978.	NS 781029

[End this table]

11. Electrical Equipment Factories (Comprehensive)

The Tae'an Electrical Equipment Factory was built in 1955 with Chinese aid for the production of large generators and transformers, and the Pyongyang Electrical Equipment Factory and Pyongyang Electric Wire Factory were built about 1960 with Czechoslovak aid. Only then did North Korea's electrical equipment factories begin producing electrical equipment.

Under the Six-Year Plan, factories were built for the production of electrical parts for automation and storage batteries. At the same time, with the augmentation of the plant facilities of the Tae'an Electrical Equipment Factory, North Korea came to produce for the first time a 50,000 kw generator and 200,000 kw transformer. The 50,000 kw hydropower generator, installed at the Sodusu Power Plant, has now reached the level of practical use.

Whereas North Korea's heavy electrical equipment industry has been comparatively developed, the electrical equipment industry for products for the general public is extremely poor and is barely meeting the minimal needs.

The Pullyu River Electric Factory, Ch'ongnyon Electric Factory, and Ch'olligil [a thousand li long road] Electric Factory are reported to be factories producing electronic parts for automation, but it is not known where they are located. The possibility is strong that they have been built somewhere in the mountains and that they have close connections with munitions factories. As to other electrical equipment, please refer to communications equipment factories and large-size machine works.

Electrical Equipment (Comprehensive) Factories

Name	Location	Products	Remarks	Source
Tae'an Electrical Equipment Factory	Tae'an-tong, Tae'an City, So P'yongan Prov	Generator, transformer, fiber glass, chemical products	Construction is completed in 1955 with Chinese aid. 70,000 kw and 200,000 kw transformers, 50,000 kw hydropower generator, 10,000 kw bipolar high-tension electric motor, DC generator for use in "Kumsong" model 2,500 HP diesel locomotive are produced during the six-year plan. 50,000 kw thermal power generator is produced in 1975. 1,270 kw AC generator is produced in 1975. 65,000 kw transformer is produced in 1976. The factory has fiber glass subplant and chemical subplant under its umbrella. Number of employees as of 1963: 5,300 The factory has cooperative relations with Vladimir Ilich Electrical Equipment Factory, Moscow. Deputy Manager: Kang Tong-ho Factory bulletin writer: Chong Kil-so	KK-16-58 KK-14-57 NS 750920 NS 751109 NS 751220 NS 790208 D-7010-98 KK-50-18 MB 770519 NS 771125
October 5 Electrical Equipment Factory (Pyongyang Electrical Equipment Factory)	P'yongch'on District, Pyongyang City	Electric bulb, fan, electric iron, electric motor, distributing board, rectifier, refrigerator	Construction is completed in 1960 with Czechoslovak aid. The factory emerges as October 5 Electrical Equipment Factory (in P'yongch'on District). High-efficiency pumps are produced in quantity in 1978. Chief Engineer: Chong Kwan-ik	KK-16-58 NC 780628 RR 780614 NS 760130
June 1 Electrical Device Factory (Pyongyang Electrical Device Factory)	P'yongch'on District, Pyongyang City	Electric bulb, plug receptacle	The factory emerges in 1977 as the June 1 Electrical Device Factory. The factory has a 30 ton hydraulic press. Factory newspaper editor: Han Hak-ki	NS 771226 MC 780110 NS 710707

(Continued on next page)

Electrical Equipment (Comprehensive) Factories (Continued)

Name	Location	Products	Remarks	Source
Pyongyang Chollima Electric Factory	Sosong District, Pyongyang City	Electric washing machine, fan, voltmeter, broadcasting equipment		
Pot'onggang Electric Factory	Pot'onggang District, Pyongyang City	Dynamo for automobile, electric motor	Production in 1974 of automobile starter motor is reported.	CG-7401-63
Taedonggang Television Sets Factory	Taedonggang District, Pyongyang City		(Refer to the Communications Equipment section)	
Taedonggang Storage Battery Factory	P'yongch'on District, Pyongyang City	Battery for automobile	Construction is reported to be under way as of 1977. Near completion is reported in 1978 by the Soviet Union Annual production capacity with Soviet aid: 1.2 million units Products are exported to the Soviet Union in repayment of debt. Annual production exceeds 1 million units and [Koreans] are undergoing training at present at the (Zhumin) Storage Battery Factory in the Soviet Union.	NC 770306 KK-51-32 KK-38-41 KK-40-68 MB 790115
March 26 Factory (Pyongyang Electric Wire Factory)	P'yongch'on District, Pyongyang City	Transmission cable, communication Aluminum wire for electric motors and transformers is produced in 1978. Production in 1978 of wire made of metal other than nonferrous metal is reported. The factory is renamed as the March 26 Factory to honor the on-the-spot guidance of President Kim on 26 March 1968.	Annual production capacity: 12,000 tons The factory is built in 1962 with communication Aluminum wire for electric motors and transformers is produced in 1978. Production in 1978 of wire made of metal other than nonferrous metal is reported. The factory is renamed as the March 26 Factory to honor the on-the-spot guidance of President Kim on 26 March 1968.	NB 7410-04 KK-16-58 NS 780128 KK-50-80 NS 780130

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Electrical Equipment (Comprehensive) Factories (Continued)

Name	Location	Products	Remarks	Source
Saenal (New Day)	Pyongyang City	Enamel electric wire	Construction is completed in 1977. Products are exported to the Soviet Union in repayment of debt.	KK-40-68
Wire Factory (Pyongyang Enamel Electric Wire Factory)			Factory is built, with Soviet and Hungarian aid, for production of 0.02mm-1mm enamel electric wires. Decision to fulfill the first quarter plan of 1979 is reported.	
			Manager: Kim Hyon-sun	KK-53-33
Pyongyang Ceramic Factory	Pyongyang City	High voltage insulator		
Namp'o Electrode Plant, of Kangson Combined Steel Works	Namp'o City, So P'yongan Prov	Electrode	Electrode for electric furnace is produced. Belt conveyor system for electrode production is installed in 1978.	NS 770216 NS 780705
Haeju Electrical Equipment Factory	Haeju City, So Hwanghae Prov	Small electric motor, small transformer	In 1976, production of transformers is reported.	NS 760620
Ch'olsan Electrical Equipment Factory	Ch'olsan County, No P'yongan Prov		(Refer to Mining Equipment Factories section)	
Pullyugang Electric Factory	So P'yongan Prov	Automation instruments	Transistor radio is produced.	MY-7607-27
Annokkang Electric Factory				
Ch'ongnyon Electric Factory		Automation instruments	The factory is built under the 6-year plan.	KS 750311

(Continued on next page)

Electrical Equipment (Comprehensive) Factories (Continued)

Name	Location	Products	Remarks	Source
Ch'olligil Electric Factory		Automation instruments	The factory is built under the 6-year plan.	KS 750311
Ch'ongjin Electrical Equipment Factory	Ch'ongjin City	Electric motor, transformer	Production in 1975 of high voltage transformer is reported.	NS 751004
June 5 Electrical Equipment Factory (Chuul)	Kyongsong-up, Kyongsong County, Ch'ongjin City	Irrigation pump, transformer, electric motor, high voltage insulator	Various kinds of insulators are produced. President Kim gives his on-the-spot guidance in 1978 and inspects irons. Factory bulletin writer: Ho Yong-ch'ol	NS 781117 NS 780629 NS 781223
Hoeryong Electric Motor Factory	Hoeryong County, No Hamgyong Prov	Electrical equipment for coal mine (electric motor and transformer)	Factory bulletin writer: Kim Son-yong	NS 780413
Hamhung Electric Bulb Factory	Hamhung City, So Hamgyong Prov	Electric bulb		
Yongsong Storage Battery Factory	Yongsong District, Pyongyang City	Storage battery		
Pon'gung Electrical Equipment Factory (Factory Where Comrade Kim Tong-yon Is Working)	Hamhung City, So Hamgyong Prov	Very small motor	The factory is built with Soviet aid for annual production capacity of 1 million units. Construction is completed in 1974. Products are exported to the Soviet Union in repayment of debt.	KK-38-41 KK-08-06 KK-40-68

(Continued on next page)

Electrical Equipment (Comprehensive) Factories (Continued)

Name	Location	Products	Remarks	Source
Songch'on'ga-Hamhung City, ng Electric So Hamgyong Prov Factory			Production in 1978 of submergible pumps is reported.	NS 780610
Hungsang Electric Motor Factory Kim Ch'aek Electrical Equipment Factory	Tonghungsang District, Hamhung City, So Hamgyong Prov Kim Ch'aek City So Hamgyong Prov	Electric motor	Factory bulletin writer: Pak Ch'on-su	NS 770522
Tae'an Heavy Machine Works	Tae'an City, So P'yongan Prov	Large-size power generating facilities	(Refer to the General MachineWorks section)	

[End this table]

12. Communications Equipment Factories

The communications equipment branch is the area where North Korea is falling behind the most.

Heretofore, North Korea has produced 16-19 inch television sets, radios, telephone switchboards, telephones, wire broadcasting equipment, radar, etc., but these are products practically all of which have been assembled with parts imported from abroad. Since the Six-Year Plan (1971-1976) began, efforts have been made to import the technology of the West, one of which is the color television broadcast which began on 15 April 1972. The technology and equipment were imported from Japan's NEC. The production of 100,000 television sets was scheduled under the Six-Year Plan, and to this end, the construction of the Taedonggang Television Set Factory was planned but it was not completed until early 1979.

The Namp'o Communications Equipment Factory is the largest of its kind in North Korea. This factory has connections with the Chinese communications equipment factory in Nanking, and President Kim visited this Chinese factory in April 1975. The Namp'o factory is producing communications equipment and radar for military use, and its military color is deep. From the beginning, North Korea's industry in this area has been designed to fill military needs, not the general public's. As a factory exclusively producing military communications equipment, there is the Combined Enterprise Where Comrade Ho Min-son Is Working, but no details are known. Meanwhile, the Anju Communications Equipment Factory seems to have made great strides. As this industry has a close bearing on the munitions industry, there have been few formal reports released by North Korea.

Although there have been no direct reports on the production of integrated circuits and the industrialization of semiconductors, it is believed that considerable progress has been made recently in this field.

Communications Equipment Factories

Name	Location	Products	Remarks	Source
Namp'o Com-munications Equipment Factory (March 14 Factory)	Namp'o City, So P'yongan Prov	Radio, television, electric gramophone, telephone, wireless equipment, radar, wire broad-casting equipment		
Pyongyang Communications Equipment Factory	Pyongyang City	Telephone wire, automatic switchboard	Production of switchboard is reported. Use of soybean oil is reported. The factory has an element shop. Director, Planning Division: Sin Sang-chin Chief, Designing Room: Yim Yong-ch'ang Operation is confirmed in 1977.	NS 770205 NS 780307 NS 771115 NS 770205 NS 770205 NS 770701
Pyongyang Disabled Veterans Factory for Communications Equipment Repair	Pyongyang City			
Taedonggang Television Sets Assembly Factory	Pyongyang City	TV set	Photograph showing completion of construction in 1979 is formally released. 200m road construction project is completed in 1978. The factory is equipped with cathode-ray manufacturing facilities imported from Toshiba for 9.1 billion yen (presumed). Production of electric gramophone is reported in 1975.	GH-7901-24 NC 780816 KX-33-63 NS 750819
Motion Picture Equipment Factory	Pyongyang City	Projector		

(Continued on next page)

Communications Equipment Factories (ctd)

Name	Location	Products	Remarks	Source
May 7 Disabled Veterans Communications Equipment Factory	No Hamgyong Prov		The factory is renamed to honor President Kim's on-the-spot guidance on 7 May 1958.	NS 730618
Anju Communications Equipment Factory	Anju County, So P'yongan Prov	Loudspeaker, small transformer	Production of telephone relay broadcast equipment is reported in 1975.	NS 751218
Combined Enterprise Where Comrade Ho Min-son Is Working (comprehensive electronic equipment factory)	Huich'on City, Chagang Prov	Military communications equipment	The factory is merged in 1978 with the communications Combined Enterprise Where Comrade Ho Min-son Is Working (presumed). (former name: Factory Where Comrade Ho Min-son Is Working)	KK-52-56
Ch'ongjin Railway Signal Apparatus Factory	Ch'ongjin City	Signal apparatus	Report appears for a second time in 1978.	NS 780326
Yanggangdo Communications Equipment Accessories Factory	Yanggang Prov		Existence of the factory is confirmed in 1978.	NS 780903
Wonsan Television Sets Assembly Factory	Wonsan City, Kangwon Prov	TV sets	Existence of the factory is confirmed in 1978.	KS 781005

(Continued on next page)

Communications Equipment Factories (ctd)

Name	Location	Products	Remarks	Source
Tanch'on Disabled Veterans Television Factory	Tanch'on County, So Hamgyong Prov	TV sets		
Kangwondo Communications Equipment Repair Factory	Kangwon Province		Factory bulletin writer: Kim Chong-chong	NS 790402

III. Transport Industry

13. Automobile Factories

North Korea began in 1950 with Czechoslovakian aid to build an automobile factory in Tokch'on County, South P'yongan Province, and started the domestic production on 18 November 1958 of "Sungni" 58 model trucks, modeled after the Soviet GAZ 51 model. This is the Tokch'on Automobile Factory which is currently called the Sungni Automobile Factory. (The product name "Sungni" comes from Sungni Mountain in the county.)

The following year, 1959, the Ministry of Transport Automobile Repair Factory (later became the Pyongyang Automobile Repair Factory) succeeded in a trial manufacture of 8-10 ton class "Cholli Pony" model truck, and the West Pyongyang Railway Works (the present Kimchongt'ae Electric Locomotive Works), in the trial manufacture of "Cholli Pony" electric automobile, but there have since been no reports whatsoever on the production of either of these vehicles.

It was reported in 1961, soon after the Seven-Year Plan (1961-1970) got under way, that the production of "Sungni" 61 model military trucks was begun, followed by the production of "Sungni" 1010 model, "Sungni 4.15" model, "T'ujaeng" model, "Chaju" model and the 25 ton class "Sungnisan" model (now "Konsol" model). But currently in quantity production are only the "Sungni" 58 model, "Sungni" 61 model (military), "Chaju" model (military) and "Konsol" model.

So far, the biggest truck produced is the 100 ton class truck which was manufactured in 1975 on a trial basis, but there has been no information that this truck is being produced on a regular basis.

In addition to trucks, minibuses and passenger cars are being manufactured, and the details are given in the following table.

Under the second Seven-Year Plan (1978-1984), it is projected to expand the "Konsol" model truck shop of the Sungni Automobile Factory for a sixfold increase of production, for a fivefold increase of "Chaju" model trucks, so as to supply in 3 years the trucks needed by mineral and coal mines.

North Korea's Automobiles

Name	Load Capacity	For Use as	Remarks	Produced by
"Sungni" 56 model	2.5 tons	Hauling general cargo	North Korea's first production truck	Sungni Automobile Factory (Tokch'on Automobile Factory)
"Sungni" 61 model	2.5 tons	Military	4-wheel drive	-ditto-
"Sungni" 58 K model		Hauling general cargo	Variation of "Sungni" 59 model	-ditto-
"Kaengsaeng" 68 model (Jeep)		Military/passenger	4-wheel drive	
"Kaengsaeng" 68 Na model		Military/freight	4-wheel drive	
"T'ujaeng" model	3.5 tons			Sungni Automobile Factory
"Chaju" model	10 tons	Construction/military	Maximum output: 240 HP	-ditto-
"Konsol" model	25 tons	Mining	North Korea's biggest production truck. Maximum output: 375 HP	-ditto-
"Ch'ungsong" model (microbus)	22 passengers	General passenger transportation		
"Paektusan" model		Passenger car		
"Chollima" 74 model (trolley bus)		Intracity passenger transportation		Pyongyang Trolley Bus Factory (formerly Pyongyang Automobile Repair Factory)

(Source: KITA CHOSEN KENKYU, issue No 48, p 37)

Automobile Factories

Name	Location	Products	Remarks	Source
Sungni Combined Automobile Factory (formerly Tokch'on Automobile Factory) (Factory Where Comrade Kim Se-yun Is Working)	Tokch'on County, So P'yongan Prov	Trucks	The factory produces "Sungni" 58 model, "Sungni" 61 model, "Sungni" 58 Ka model, "T'ujaeng" model, "Chaju" model, and "Konsol" model trucks. 40m3 drying oven is installed in 1978. Expansion of "Konsol" model assembly line is reported to be in progress with Soviet aid as of 1978. The factory has 1,200 ton and 1,600 ton presses. SFA Deputy Kim Hyong-hae reports on the second Seven-Year Plan. Manager: Kim Se-yun Factory bulletin writer: O Song-sik Trolley bus is produced in 1967.	KX-48-37 KX-45-83 KX-49-52 NS 771020 NS 771219 MC 740323 NS 770816 CS-6701-18
Pyongyang Trolley Bus Factory (formerly Pyongyang Automobile Repair Factory)	Sosong District, Pyongyang City	Trolley bus, microbus		
March 30 Factory (Pyongyang Coal Mining Equipment Factory)	Pyongyang City	Large-size truck	One 100 ton class truck is assembled in 1975.	KX-10-36
Pyongyang Tractor and Automobile Accessories Factory	Pyongyang City		The factory is merged with Pyongyang Tractor Accessories Factory in 1978. Factory bulletin writer: Yi To-sun	NS 770312 NS 770312
Sonch'on Coupling Vehicles Factory	Sonch'on County, No P'yongan Prov	Coupling vehicles	Factory bulletin writer: Chang T'ae-sun	NS 770302

(Continued on next page)

Automobile Factories (ctd)

Name	Location	Products	Remarks	Source
Hungnam	Hungnam District,	Coupling	Factory bulletin writer/correspondent:	NS 780608
Coupling	Hamhung City,	vehicles	To Yong-ch'an	
Vehicles	So Hamgyong Prov			
Factory				

[End this table]

14. Tractor and Agricultural Machine Factories

North Korea, copying the Soviet tractor (Model T-28A), had the first domestic tractor produced at Kiyang Tractor Factory in 1958--the "Chollima" model tractor (28 HP).

Later, the Kanggye Tractor Factory also began producing 15 HP tractors but it is believed that this factory is no longer producing tractors, as it has since been developed into a factory producing weapons such as shells and gun barrels.

In 1969, the 9.25 Tractor Factory in Sunch'on County, South P'yongan Province, began producing "Chonjin" model tractors (16 HP), and during the Six-Year Plan (1971-1976), the "Ch'ungsong" Model Tractor Factory in Wonsan City, Kangwon Province, started producing "Ch'ungsong" model tractors (8 HP).

And in 1973, Kiyang Tractor Factory, renamed Kumsong Tractor Factory, made a completely new start.

At present, these three are all the factories North Korea has for the production of tractors.

North Korea used to put the greatest emphasis on the production of 28 HP tractors, followed by the production of 75 HP "P'ungnyon" model tractors which are convertible to bulldozers, but during the Six-Year Plan a greater input of effort began to be made into the production of small tractors such as 15 HP tractors. This has been necessitated by the not so large scale of North Korea's agriculture.

Under the Six-Year Plan annual tractor production was scheduled for 21,000 units (of which "Chollima" model tractors would be 10,000 units and "P'ungnyon" model tractors, 5,000 units), but it was reported that the annual tractor production reached the 30,000 unit level as early as 1973. Under the second Seven-Year Plan (1978-1984) the production target is set at 45,000 units. A simple computation based on the production targets of the Six-Year Plan would indicate that under the second Seven-Year Plan production is projected for 20,000 units of the "Chollima" model, 10,000 units of the "P'ungnyon" model, and 15,000 units of the "Chonjin" and "Ch'ungsong" models combined.

The exact number of tractors in possession has not been announced but after the Six-Year Plan it was reported that the number of tractors in possession averaged 6 units per 100 chongbo in the plains areas, and 5 units in the mountainous and plains areas. From this report, computed on the basis of 2.1 million chongbo, the total areas under cultivation (of this 700,000 chongbo are dry fields), it would compute to 112,000 tractors (6 units multiplied by 700,000 chongbo divided by 100 chongbo, and 5 units multiplied by 1.4 million chongbo divided by 100 chongbo).

Under the second Seven-Year Plan, 10 units are scheduled per 100 chongbo; therefore, according to the aforementioned computation, the total number of tractors in possession would increase to 210,000 units.

Tractor and Agricultural Machine Factories

Name	Location	Products	Remarks	Source
Kumsong Tractor Factory (formerly Kiyang Tractor Factory)	Kiyang-tong, Taean City, So P'yongan Prov	15 HP, 28 HP, 75 HP tractors	Commencement of operation is marked with ceremony on 26 July 1973. "Chollima" model (15 HP), "Chollima" 28 model (28 HP), and "P'ungnyon" model (75 HP) tractors are being produced. Resolution is passed to produce engines for 1,200 tractors in the first half of 1977.	NS 730727 KN 7810-17 KK-50-25 NS 770505
			The first forestry tractor is produced in 1975 (refer to the May 8 Forestry Machine Works under General Machine Works).	NS 751001
			Forestry tractor "T'aesong" model is produced.	NC 780305
			"Chuche" model tractor is produced. Large-size bulldozer ("Man'gyongdae" model) is produced in 1970 (at present it is being produced by the Man'gyongdae Bulldozer Factory).	KN-7810-17 NS 701031
			The factory has Tokung Sewing Machine Factory under its umbrella.	NS 760319
			In the early 1960, tractor production was 3,000 per year; at present it is 30,000 units per year (computed on the basis of 15 HP).	RR 780822
			"P'ungnyon" model engine production is projected under the second Seven-Year Plan. Number of employees: 6,800 Manager: Han Kyu-p'al Chief Engineer: Kim Chu-ho Superintendent, Automation Elements Subplant: Chang Yun-mal	NS 770822 KK-49-79 NS 741229 CL-7607-59 NS 790419
9.25 Tractor Sunch'on-up, Tractor Factory (Sunch'on Tractor Accessories Factory)	Sunch'on County, So P'yongan Prov	16 HP tractor	Production of "Chonjin" model (16 HP) tractor is begun in 1969. Production of gearbox is reported. Rainmaker is produced in 1978.	KK-13-35 NS 780303 NS 780210

(Continued on next page)

Tractor and Agricultural Machine Factories (ctd)

Name	Location	Products	Remarks	Source
"Ch'ungsong" Model Tractor Factory (Factory Where Comrade Kim Hung-su Is Working)	Wonsan City, Kangwon Prov	8 HP tractor	"Ch'ungsong" model (8 HP) tractor is produced. "Ch'ungsong" model engine (diesel) is produced. The factory comes under the Machine Industry Branch in 1973. Factory bulletin writer: Kim Ch'ong-chang	NS 740226 NS 761023 H-Vol 6-307 NS 781218
Kanggye Tractor Factory	Kanggye City, Chagang Prov		(It is not known if the factory is still producing tractors.)	
May 8 Forestry Machine Works	Hyesan City, Yanggang Prov	Forestry tractor	(Refer to General Machine Works)	
Pyongyang Tractor and Automobile Accessories Factory	Pyongyang City	Tractor accessories	2 ton hammer is produced in 1978	NS 781104
Anju Tractor Accessories Factory	Anju County, So P'yongan Prov	Tractor accessories	Factory bulletin writer: Kim Won-hui	NS 770125
Chongju Tractor Accessories Factory	Chongju County, No P'yongan Prov	Tractor accessories	Factory bulletin writer: Kang Kuk-hyon	NS 790331
Kanggye Tractor Accessories Factory	Kanggye City, Chagang Prov	Tractor accessories, farm implements	Factory bulletin writer: Kim Ik-hwa	NS 781113
Kumya Tractor Accessories Factory	Kumya County, So Hamgyong Prov			

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Tractor and Agricultural Machine Factories (ctd)

Name	Location	Products	Remarks	Source
Hamhung Tractor Accessories Factory	Hamhung City, So Hamgyong Prov	Tractor accessories (piston rings)		
Wonsan Tractor Accessories Factory	Wonsan City, Kangwon Prov			
Sariwon Tractor Accessories Factory	Sariwon City, No Hwanghae Prov			
Haeju Tractor Accessories Factory	Haeju City, So Hwanghae Prov	Tractor accessories	Factory bulletin writer: Yi Il-sang Factory bulletin writer: Kim T'ae-song Factory bulletin writer: So Song-kyu	NS 780324 NS 780627 NS 780808
Kaesong Tractor Accessories Factory	Kaesong City			
Anju Coupling Farm Machinery Factory	Anju-up, Anju County, So P'yongan Prov		(Refer to September 28 Factory)	
Ch'ongjin Coupling Farm Machinery Factory	Ch'ongjin City	Coupling plow and other farm machinery, 8 HP tractor	"Ch'ungsong" model tractor parts are produced. Assembling of "Ch'ungsong" model tractor is reported in 1970 to be in progress.	NS 790406 NC 790502
Hamhung Coupling Farm Machinery Factory	Hamhung City, So Hamgyong Prov	Coupling vehicles, rice transplanter, artificial rainmaker, pump, farm implements	Manager: Kim Hong-nyon	NS 780127

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Tractor and Agricultural Machine Factories (ctd)

Name	Location	Products	Remarks	Source
Hamgyongnamdd Coupling Farm Machinery Factory	So Hamgyong Prov	Coupling vehicles		
Haeju Coupling Farm Machinery Factory	Haeju City, So Hwanghae Prov	Rice transplanter	Factory bulletin writer: Yi Il-sang	NS 780810

(End this table)

15. Tire and Rubber Factories

North Korea's tire factories are on a comparatively small scale, a situation inevitably resulting from a fewer number of trucks and passenger cars compared with the Republic of Korea.

So far, it has been confirmed that North Korea is producing tires for "Chollima" model tractors (28 HP) and smaller tractors, and for "Sungni" 58 model trucks. It is not known if North Korea is producing tires for large-size trucks but it is believed that in all probability it is importing them.

Construction of a synthetic rubber factory was projected under the Six-Year Plan (1971-1976) but so far, there has been no report from North Korea of its completion. But the Soviet side reported of its completion with Soviet aid in 1979, and it is expected that the North Korean side will announce the factory name some time in 1979.

Tire and Rubber Factories

Name	Location	Products	Remarks	Source
Hasong Tire Factory (Tire Factory Where Comrade O Sok-ung Is Working)	Sinwon County, So Hwanghae Prov	Tires for automobiles and tractors	Completion of construction is reported on 3 October 1975. The factory emerges as Factory Where Comrade O Sok-ung Is Working. Factory bulletin writer: Kim Yong-ch'an	KK-17-50 KK-31-46 NS 780324
Kangdong Tire Factory	Kangdong County, So P'yongan Prov	Tires for automobiles and tractors	Crude rubber conservation is reported in 1977. Factory bulletin writer: Ho Ch'ang-son	NS 770226 NS 770226
Pyongyang Tire Factory	Pyongyang City			
Hamhung Tire Factory	Hamhung City, So Hamgyong Prov	Tires for tractors and coupling vehicles	Factory bulletin writer: Yi Chong-ku	NS 780216
Anokkang Tire Factory (Chollima Tire Factory)	Kanggye City, Chagang Prov	Tires for automobiles and tractors	The present factory name is confirmed in 1976. The factory is built along the Yalu River	NS 760309 MC 780330
Samch'on Tire Recapping Factory	Samch'on County, So Hwanghae Prov		The factory recaps tires.	NS 770711
Synthetic Rubber Factory			Completion of construction with Soviet aid is reported in 1979.	MB 790206
Pyongyang Rubber Factory	Pyongyang City	Various rubber products (hose, washer, etc.)	Factory bulletin writer: O Ch'ang-pin	NS 780331

[End this table]

16. Railway Vehicles Factories

North Korea's major railway vehicles factories are the Kim Chong-t'ae Electric Locomotive Works and the June 4 Rolling Stock Factory. Others are producing railway vehicle accessories and making repairs.

The Kim Chong-t'ae Electric Locomotive Works is the factory which in 1961 assembled the "Red Flag" model electric locomotive, the first domestically produced electric locomotive. This factory is currently producing two types of "Red Flag" model electric locomotives. One is the six-axle locomotive whose production began in 1961 and is identified by the serial number 5 followed by three-digit numerals. It is believed that as of January 1979 a total of 207 locomotives were produced. The other is four-axle locomotive for use in steep slopes whose production began in 1969 or thereabout and is identified by the serial number 4 followed by three-digit numerals. It is believed that some 50 units of this locomotive were produced up to 1978.

In addition, this factory is producing the 25 ton class electric locomotive for use in mineral and coal mines, and subway electric engines and passenger cars for the Pyongyang subway system. In 1975, the factory produced the "Kumsong" model 2,500 HP diesel locomotives, and in 1978, the "Chuche" model electric passenger cars, which are claimed to be the first above-ground electric-powered cars in North Korea. This factory thus made great strides during the Six-Year Plan (1971-1976).

At the time the "Kumsong" model diesel locomotives were first produced, it was reported that the locomotives were produced at the fast pace of 80 days per unit. It is believed that 14 units of this locomotive were produced up to January 1979. But none of the rolling stock photographs released by North Korea show this model locomotive in motion, and imported parts are still being used for the production of diesel locomotives.

The June 4 Rolling Stock Factory, a factory exclusively producing railway freight cars, came to increase the variety of vehicles produced during the Six-Year Plan, such as the 60 ton freight cars (62 tons according to a Soviet report), refrigerated cars, and oil tank cars.

This factory is producing its products with Soviet technical guidance, and during the second Seven-Year Plan (1978-1984), is scheduled to greatly increase its production with Soviet aid.

It was reported that under the Six-Year Plan the number of heavy-duty freight cars (60 ton class) in possession increased 1.8 fold, and the number of electric locomotives ("Red Flag" model) and diesel locomotives (practically all of them the "Kumsong" model) in possession, 1.5 fold. Thus it is believed that from 1961 up to the end of 1978 North Korea produced 257 electric locomotives and 16 diesel locomotives. This means that the combined total target of 200 units of both electric and diesel locomotives under the [first] Seven-Year Plan was reached only by the middle of the Six-Year Plan.

Under the second Seven-Year Plan it is projected to build a new exclusive container factory in the West Sea (Yellow Sea) district and a modern freight car production factory. The exact location of this modern freight car production factory is not made known but according to a Soviet announcement, the Soviet Union is scheduled to extend aid to the Ch'ongjin Rolling Stock Factory, one of the 16 target plants under the second Seven-Year Plan, toward a annual production capacity of 8,000 units.

Incidentally, after completion of the second Seven-Year Plan it is estimated that North Korea will have in possession freight cars in excess of 25,000 units.

Railway Vehicles Factories

Name	Location	Products	Remarks	Source
Kim Chong-t'a Electric Locomotive Works (formerly Pyongyang Electric Locomotive Works)	Sosong District, Pyongyang City	Electric locomotives, electric cars, diesel locomotives	The "Red Flag" model electric locomotive (general purpose) is produced in 1961, identification serial number 5 followed by three-digit numerals. The "Red Flag" model electric locomotive (steep slopes) is produced in 1969, identification serial number 4 followed by three-digit numerals. The "Choguk T'ongil" (Fatherland Reunification) model electric locomotive (similar to the "Red Flag" six-axle model) is produced in 1970. Internal combustion locomotive ("Saebyol" model) is produced in 1970. Subway electric car is produced in 1973. Production of "Kumson" model diesel locomotive (2,500 HP) is begun in 1975. Photograph of subway electric car in progress of assembly is released in 1975. The "Chuche" model above-ground electric car is produced in 1978. The "Man'gyongdae" model electric locomotive is produced in 1979. Factorywide production target is projected to increase 2.5 fold under the second Seven-Year Plan. Number of employees as of 1963: 6,000 Manager: Pak Mal-pom Factory bulletin writer: Cho Ch'i-son Factory bulletin writer: Yi Hung-chun	KK-57-40 GH-7010-25 NS 701112 NS 730906 KK-12-48 GH-7502-19 KK-47-63 NS 790428 NS 780822 D-7010-86 JR NS 781218 NS 770819 C-7409-08 GH-7203-17 GH-7405-36 KS 740628 F-7511-99
June 4 Rolling Stock Factory (formerly Wonsan Railway Works)	Wonsan City, Kangwon Prov	General and special freight cars, passenger cars	Production with Soviet aid of a 62 ton all-metal open freight car is reported in 1974. Photograph of a refrigerated car is released in 1972. Photograph of an oil tank car is released in 1974. 120 ton freight car is produced in 1974. Number of employees as of 1972: 4,000	

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Railway Vehicles Factories (Continued)

Name	Location	Products	Remarks	Source
July 6 Railway Works (Nahung Railway Works)	Nahung Laborers' Settlement, Iwon County, So Hamgyong Prov	Accessories for locomotive, freight and passenger cars	Reorganization as a modern factory is reported in 1978. Factory bulletin writer: Chang Myong-nyong	NS 780315 NS 770115
Ch'ongjin Railway Works	Ch'ongjin City	Freight cars	Annual production of freight cars is projected to increase to 9,000 units with Soviet aid during the second Seven-Year Plan.	KX-51-32
Kujang Railway Works	Kujang County, No p'yongan Prov		(Unknown if the factory is currently in operation)	
Hamhung Combined Railway Works	Hamhung City, So Hamgyong Prov	Railway vehicle repair	Crane is produced in 1977.	NS 770507
Pyongyang Rolling Stock Repair Factory	Pyongyang City			

(End this table)

17. Shipbuilding Yards

Politically, North Korea is at a disadvantage in marine transportation connecting the East Sea (Sea of Japan) and the West Sea (Yellow Sea). For this reason, North Korea had not been that enthusiastic about building cargo vessels, solely focusing its effort on building fishing vessels. Even the fishing vessels were of small size, the biggest built under the first Seven-Year Plan (1961-1976) being in the 1,000 ton class.

But as fisheries and foreign trade increased during the Six-Year Plan (1971-1976), North Korea came to put major efforts into building large-size cargo vessels.

North Korea's biggest shipyard is the Namp'o Shipyard in Namp'o City, South P'yongan Province. This shipyard has two shipways at present, and the first North Korean cargo vessel of its class, the "Taedonggang" of the 20,000 ton class, was launched here in 1975. The shipyard has since been launching cargo vessels at the rate of one ship a year.

The next biggest shipyard is the Ch'ongjin Shipyard in Ch'ongjin City. This shipyard, which had constructed a 5,000 class sideslip in 1971, launched a 5,000 ton class refrigerator transport ship, the "Pirobong," in 1972, and launched in 1974 the 14,000 ton class cargo vessel "Wangjaesan," the first of its class in North Korea.

These are the two representative shipyards of North Korea, and the years 1974-1975, in which the two shipyards launched the 20,000 ton class and 14,000 ton class cargo vessels respectively, marked the beginning of North Korea's shipbuilding industry in real earnest.

In addition to these shipyards which are exclusively building large-size cargo vessels, there are two shipyards which are exclusively building stern trawlers. They are the Wonsan Shipyard in Wonsan City, Kangwon Province, and Sinp'o Shipyard in Sinp'o City, South Hamgyong Province. The Wonsan Shipyard launched the first 3,750 ton class stern trawler of North Korea, the "Ogasan," and Sinp'o Shipyard, the "Pannyongsan" of the same class in 1975. Since then the two shipyards have been launching 3,750 ton class stern trawlers approximately at the rate of one trawler every 2 years.

Additionally, there are Najin Shipyard exclusively building military vessels, and Yongamp'o Shipyard which was built with Chinese aid during the Six-Year Plan (1971-1976).

Incidentally, Najin Shipyard is called the June 12 Factory for purposes of disguising its identity, it is believed. This nom de guerre has been used since the shipyard began building military vessels.

In North Korea, in addition to what is called shipyard, there are several shipyards called ship factories. The Kimch'aek Ship Factory, the biggest of all them, is building ships no bigger than the 1,500 ton class.

Among the special vessels constructed in North Korea there are the ferro-concrete fishing vessels built in 1978, and crane ships and dredging ships of the 75-80 ton class.

As to ship repairs, large-size vessels are repaired at Namp'o Shipyard and Ch'ongjin Shipyard, and small-size vessels at ship factories or ship repair factories.

From about 1974-1975 North Korea has been able to build the 14,000 ton class and 20,000 ton class cargo vessels and the 3,750 ton class stern trawlers on its own, and the construction of the 50,000 ton class cargo vessels is projected under the second Seven-Year Plan (1978-1984). Details as to where the large-size cargo vessels would be built have not been released but there are no other shipyards large enough to build them than Ch'ongjin and Namp'o shipyards. Especially in light of the fact that Namp'o Shipyard is pushing a harbor expansion project along with a construction project for No 3 Shipway, Namp'o Shipyard will probably be building them. No 3 Shipway is believed to be the dock which is currently under construction.

There is a possibility that North Korea, whose shipbuilding industry began making great strides since about 1974-1975, although it may not catch up with the Republic of Korea even after the current plan is implemented, will still be the biggest shipbuilding country in Asia, next to the Republic of Korea.

Incidentally, the 10,000 ton class processing mother-ships (one is called the "Paektusan") currently in use by North Korea are all mother-ships provided by the Soviet Union, but North Korea announced its plan to build the 10,000 ton class processing mother-ships as well in the future.

As to marine engineering, so far Tonghae Marine Engineering Office has been confirmed as such. Unable to fill its needs with ships built on its own alone, North Korea has purchased secondhand ships from Japan (the "Hyoksin," formerly the "Kyokuyo Maru") and new ships built in the Netherlands or Japan (the 5,200 ton "Aeguk").

Shipyards

Name	Location	Remarks	Source
Namp'o Shipyard (Shipyard Where Comrade Kim Tong-sok is Working)	Namp'o City, So P'yongan Prov	20,000 ton class cargo vessel TAEDONGGANG is built in 1975. 20,000 ton class cargo vessel CH'ONGCH'ON'GANG is built in 1977. 20,000 ton class cargo vessel is under construction as of 1978*. Plan is announced in 1978 for construction of a repair dock.	KK-14-16 KK-39-44 NS 780611 NS 780611
Ch'ongjin Shipyard (Shipyard Where Comrade Pak Si-hyong is Working)	Ch'ongjin City	3,750 ton class stern trawler PONGHWASAN is built in 1970. 5,000 ton class passenger ship MAN'GYOGBONG is completed in 1971. 5,000 ton class refrigerator transport ship PIROBONG is built in 1971. 3,500 ton class refrigerator transport ship CH'ONGBONG is built in 1973. 14,000 ton class cargo vessel WANGJAESAN is built in 1974. 14,000 ton class cargo vessel OSANDOK is built in 1975. 10,000 d.w.t. cargo vessel MUNSUSAN is built in 1978. 14,000 ton class cargo vessel TUMAN'GANG is built in 1978. The shipyard has sub-plants numbered up to No 4.	GH-7011-23 NS 710519 NS 720812 GH-7308-20 KK-05-65 KS 751027 KK-54-42 KK-54-41 NS 781126
Wonsan Shipyard (Shipyard Where Comrade Yi Chi-mal is Working) (June 24 Shipyard)	Wonsan City, Kangwon Prov	3,750 ton class stern trawler OGASAN is built in 1974. 3,750 ton class stern trawler CHANGDOKSAN is built in 1977. Ferrocement fishing vessel is built in 1978. Excursion ship plying between Wonsan and Hamhung is built in 1978. 14,000 ton class cargo vessel is under construction. 100 ton class gantry crane and 300 ton hydraulic press are produced in 1978; 300 ton class gantry crane is currently under production.	GH-7502-19 KK-52-47 KK-55-31 KK-55-32 CB 781203 CB 781203
Sinp'o Shipyard (Shipyard Where Comrade Kim Ye-myong is Working)	Sinp'o City, So Hamgyong Prov	3,750 ton class stern trawler PANNYONGSAN is built in 1975. President Kim directs in 1976 the construction of 450 ton and 140 ton class fishing vessels as well. 3,750 ton class refrigerator transport ship PAEKKUMSAN is built in 1977. Manager: Kim Ye-myong	KK-13-36 KK-31-12 KK-54-43 KK-31-18

(continued on next page)

Shipyards (Continued)

Name	Location	Remarks	Source
Yongamp'o Shipyard (Shipyard Settlement, Where Comrade Yongch'on Kang Won-uk Is Working)	Yongamp'o Laborers' Settlement, Yongch'on County, No P'yongan Prov	1,350 ton class refrigerator transport ship PAENGMASAN is built in 1972. Dredging ship is built in 1973. 5,000 ton class cargo vessel HEANGGUMSAN is built in 1974	NS 720319 NS 721216 NS 741217
June 12 Factory (Najin Shipyard)	Najin City, No Hamgyong Prov	The shipyard builds military vessels. Construction of pelagic fishing vessels is projected under the Six-Year Plan. Engine assembly and repair of the TAESONGSAN and AEGUK are carried out in 1978.	KK-15-50 KK-44-40 NS 781024
Yukt'ae Shipyard	Sinp'o City, So Hamgyong Prov	Construction plan is announced in 1971. (Note: the expanded portion of Sinp'o Shipyard is called Yukt'ae Shipyard)	NS 710101
Kimch'aek Ship Factory	Kimch'aek City, No Hamgyong Prov	Cargo vessels No 1 ONP'O and No 2 ONP'O are built in 1975. The factory has capacity building up to 1,500 ton class cargo vessels. Production of crane for handling containers is reported in 1978.	NS 750906 NS 760313 NS 781222
Namp'o Ship Factory	Namp'o City, So P'yongan Prov		
Sinuiju Ship Factory	Sinuiju City, No P'yongan Prov		
Namp'o Sea Transport Ship Factory	Namp'o City, So P'yongan Prov	Existence of the factory is confirmed in 1978 for the first time.	NS 781208
6.2 Harbor Construction Office	Ch'ongjin City	The CHARYOK KAENGSANG, a 75 ton class (winding capacity) sea crane ship, is built in 1978.	KK-53-34
Sohae Harbor Construction Office	Namp'o City, So P'yongan Prov	A 80 ton class (winding capacity) sea crane ship is built in 1979.	NS 790110
Haeju Ship Repair Factory	Haeju City, So Heanghae Prov		

(Continued on next page)

Shipyards

Name	Location	Remarks	Source
Tanch'on Ship Repair	Tanch'on County, So Hamgyong Prov		
Factory			
T'ongch'on Ship Repair	T'ongch'on County, Kangwon Prov		
Factory			
Najin Ship Repair	Najin City, No Hamgyong Prov	Factory bulletin writer: Chon Min-sop	NS 781203
Factory			
Ch'ongjin Ship Repair	Ch'ongjin City	The factory repairs several hundred fishing vessels every year.	KK-21-51
Factory		Responsible Engineer: Yim Chong-pu	KK-21-51
Wonsan Ship Repair	Wonsan City, Kangwon Prov	President Kim gives his on-the-spot guidance in 1976.	KK-31-07
Factory			
Namp'o Ship Repair	Namp'o City, So P'yongan Prov	Factory bulletin writer: Yi Yong-ho	NS 770717
Factory			
Songnam Ship Repair	Songnam-tong, Kimch'aek City, No Hamgyong Prov	Factory bulletin writer: Kim Tong-in	NS 770817
Factory			

* A "20,000 class" ship is a ship with "15,000 ton displacement," according to a report of the Soviet side (VARIOUS PROBLEMS OF THE FAR EAST, March 1979, Japanese edition).

IV. Chemical Industry

18. Petroleum Refining and Petrochemical Plants

North Korea has no petroleum resources at all. North Korea finds itself at a great disadvantage in that building a petroleum industry requires enormous funds, and in terms of securing a stable supply of crude oil.

After the Korean War, North Korea had planned to build a synthetic petroleum plant in Aoji near the Korean-Soviet border. The construction plan for this plant, which was to utilize coal, did not go well and eventually, North Korea planned to build, with Soviet aid, during the first Seven-Year Plan (1961-1970), a petroleum refinery (annual refining capacity: 2 million tons) in the Aoji District.

But because of the Soviet foot-dragging, the plant's first stage project with an annual refining capacity of 1 million tons was not completed until the middle of the Six-Year Plan (1971-1976). Moreover, both the name and location of the plant were changed: the name to Sungni Chemical Plant and the location to Unggi County, North Hamgyong Province from Aoji.

Drawing a lesson from the Sino-Soviet confrontation, North Korea began in real earnest the Six-Year Plan to import plant facilities from the West. The Ch'ongnyon Combined Chemical Enterprise, the first petrochemical plant of North Korea, was built in the Anju district of South P'yongan Province with the aid of France and other Western countries, and its plant producing urea fertilizer by pyrolytic naptha cracking is in operation as of 1979.

In addition, this enterprise is currently building plants for orlon, kraft paper and polyethylene.

Meanwhile, in a move to avoid completely depending on the Soviet Union for its petroleum industry, North Korea during the Six-Year Plan began pushing with Chinese aid the construction of a petroleum refinery at Paengma-ri, Pihyon County, North P'yongan Province, and completed in 1978 the first stage project (estimated annual refining capacity: 1 million tons).

At present, the crude oil for Sungni Chemical Plant is supplied by the Soviet Union. It is believed that the Soviet Union brings part of its light crude oil by tanker to the port of Najin, and North Korea receives the crude

crude oil to the chemical plant by pipeline. The crude oil for Ponghwa Chemical Plant is supplied by China through the two pipelines installed between China and Sinuihu. As it is heavy crude oil, this chemical plant has cracking facilities for it.

In addition, North Korea draws its crude oil supply from the Third World countries of Algeria and the Middle East. It is believed that North Korea will eventually increase its crude oil supply from Third World countries to the same ratio as with China and the Soviet Union. This graphically reflects the present foreign policy of North Korea, a policy born of its bitter experience of the 1970's.

The Ch'ongnyon Combined Chemical Enterprise can draw naphtha from Sungni Chemical Plant and Ponghwa Chemical Plant. However, as Sungni Chemical Plant supplies its naphtha to the Unggi Thermal Power Plant as fuel, the Ch'ongnyon Combined Chemical Enterprise is believed to be drawing all of its naphtha supply from Ponghwa Chemical Plant by railway.

Incidentally, a move is seen to build a petrochemical plant in the Namp'o district, but the construction is not yet under way.

Petroleum Refining and Petrochemical Plants

Name	Location	Products	Remarks	Source
Sungni Chemical Plant	Unggi County, No Hamgyong Prov	Gasoline, heavy oil, light oil	Plant facilities (annual capacity: 1 million tons) for the first stage construction project are sent by the Soviet Union in 1972-1973. It is projected under the second Seven-Year Plan to increase annual capacity to 2 million tons with Soviet aid. President Kim directs crude oil transmission by pipeline, not by ship.	C-7409-9 KX-38-40 H-Vol 6-207
Ponghwa Chemical Plant	Paengma-ri, Pihyon County, No P'yongan Prov	Refined crude oil	Construction is reported under way in 1977. The first stage construction project is completed in 1978 (annual capacity: 1 million tons). Annual refining capacity: 2.5 million tons (estimate).	KX-36-07 KX-52-50 KX-54-74
Ch'ongnyon Combined Chemical Enterprise	Anju District, So P'yongan Prov (formerly Namhung-ri, Pakch'on County, No P'yongan Prov)	Orlon, polyethylene, urea fertilizer, kraft paper	Construction of urea fertilizer plant is completed in 1976. Construction of Orlon Plant with annual capacity of 10,000 tons is in progress. Construction of Polyethylene Plant with annual capacity of 25,000 tons is in progress. Responsible party secretary: Pak Pong-chu Plant bulletin writer: Kim Won-hui	NS 760415 KX-37-93 KX-37-93 NS 780127 NS 780707

[End this table]

19. Chemical Fiber Plants

North Korea abounds in coal and limestone. For this reason North Korea has been producing its chemical fiber without relying on petrochemical means. This is vinalon being produced by the present 2.8 Combined Vinalon Enterprise whose plant construction began in 1960. Regarding this vinalon, North Korea claims that "this is a product created by the unique invention of Dr Yi Sung-ki (Director, Hamhung Chapter, the Academy of Sciences), and industrialized by the initiative of President Kim," but this is none other than the vinylon invented by Japan. However, it is a fact that North Korea has industrialized on its own so-called vinalon researched by researcher Yi Sung-ki who had returned from Japan to North Korea after World War II.

At an interview with foreign journalists in June 1974, President Kim said: "Our country holds the patent right on vinalon and we have built the vinalon factory with our own technology, and many countries are hoping that we will export the product." North Korea seems confident of its technology, and the vinalon factory in Peking was built with North Korean technical aid.

But this vinalon is already an outdated chemical fiber today now that the petrochemical industry has developed, and North Korea during the Six-Year Plan (1971-1976) planned for the production of chemical fibers by petrochemical means. This is the Orlon Plant of the Ch'ongnyon Combined Chemical Enterprise which is currently under construction in the Anju district.

Orlon is a fiber of the polyacrylonitrile group, and is the trade name of Du Pont of the United States. The construction of this plant seems to represent a measure aimed at exporting clothing material, not at improving the quality of its people's articles of clothing.

In addition, there are plants in Ch'ongjin and Sinuiju producing staple fiber and rayon using as raw material the pulp whose mill Japan had constructed before World War II. The Sinuiju Plant is using as raw material the reed growing on Pidan-som (island of silk) in Yongch'on County, North P'yongan Province.

It may be said that the clothing situation in North Korea is on a level much lower than that of the Republic of Korea.

The Vinalon Plant in the Namp'o district, whose construction plan was announced in 1974 when the Orlon Plant was still in a planning stage, was believed to be a replacement measure for giving up the Orlon Plant construction on account of the worsening foreign currency situation.

A plan for the construction of a chemical plant in the Namp'o district was again announced in March 1979, but this chemical plant was reported to be a petrochemical plant.

Chemical Fiber Plants

Name	Location	Products	Remarks	Source
2.8 Combined Sap'o District Vinalon (Pon'gung District) (vinyon in Japanese), Enterprise Hamhung City, (Enterprise So Hamgyong Prov that combined Pon'gung Chemical Plant and Pon'gung Vinalon Plant)	Sap'o District (Pon'gung District) (vinyon in Japanese), Enterprise Hamhung City, (Enterprise So Hamgyong Prov that combined Pon'gung Chemical Plant and Pon'gung Vinalon Plant)	Vinalon	Annual production capacity of vinalon: 10,000 tons Annual production capacity: 50,000 tons Construction of a new carbide retort is projected in 1970. As of 1979, an expansion project is in progress. The enterprise has Un'gok Coal Mine under vinyl chloride its umbrella. The enterprise has P'ot'a-san Coal Mine under its umbrella. Manager: So Chae-hong Chief Engineer: Sin Tae-kwang	PR 790410 KS 741119 KX-55-26 KX-55-58 NS 771229 RR 780509 NS 781020
Ch'ongjin Chemical Fiber Plant	Sunam District, Ch'ongjin City	Staple fire, rayon	Annual production capacity: 30,000 tons Production capacity target under [the first] 7-year plan: 50,000 tons Expansion is projected under 2d 7-year plan Kilchu Pulp Mill is scheduled to supply raw material.	KS 750311 KX-44-37 KX-44-37 NS 781019
Sinuifu Chemical Fiber Plant	Sinuifu City, No P'yongan Prov	Staple fire, rayon, paper, pulp	Annual production capacity of staple fiber: 20,000 tons Project to increase staple fiber production is in progress as of 1978. Production capacity target under [first] 7-year plan: 50,000 tons Expansion is projected under 2d 7-year plan. Completion of construction of a sulfuric acid shop is projected by Feb 1980. Kilchu Pulp Mill is to supply raw material.	KS 750311 NS 781114 KX-44-37 KX-44-37 KX-55-28 NS 781019
Orlon Plant, Ch'ongnyon Combined Chemical Enterprise	Anju District, So P'yongan Prov (formerly Namhung-ri, or Yonghung-ri in Japanese days, Pakch'on County, No P'yongan Prov)	Orlon (anillon in Korean)	Construction is in progress as of 1979. Projected annual production capacity: 10,000 tons	NS 790226 KS 750311
Chemical Plant in Namp'o Plant	Namp'o City, So P'yongan Prov	Vinalon	Construction project (annual production: 50,000 tons) was announced in 1974 (but construction is not yet undertaken)	KX-06-38

[End this table]

20. Chemical Fertilizer Plants

Japan had built big power plants, utilizing the Pujon River and the Changjin, and constructed a plant for the production of fertilizer using this abundant electricity as a power source. This plant was completely destroyed during the Korean War but North Korea, with priority attention to rehabilitation of this plant along with chemical plants in the Pon'gung district, built one great fertilizer base. This is the present Hungnam Combined Fertilizer Enterprise. Nearly all of North Korea's fertilizer is produced by this enterprise.

With an input of effort made into the construction of chemical fertilizer plants under the Six-Year Plan (1971-1976), in 1972 the Haeju Phosphate Fertilizer Plant was built and a microelement fertilizer system was established at the Hungnam Fertilizer Plant and Mump'yong Smeltery.

In 1973, following the establishment of a phosphate fertilizer system at Mump'yong Smeltery, Hwanghae Iron Works, and Ch'ongsu Chemical Plant, other smelteries came to produce phosphate fertilizer.

Taking such measures, North Korea succeeded in raising the ratio of phosphate fertilizer in the production of nitrogenous, phosphate and potassic fertilizer. But as North Korea's phosphate fertilizer is either ground apatite or superphosphate of lime made from apatite, an abundant domestic material, the quality is very poor.

The Haeju Phosphate Fertilizer Plant, as it has to depend on an annual import of 1.2 million tons of phosphate rocks from Egypt, is currently conducting research into a production process of domestic raw materials.

North Korea's chemical fertilizer is essentially based on its abundant electricity, limestone and apatite. For this reason, North Korea has to use the uneconomical method of electrolyzing water for hydrogen gas, and is getting ammonia by gasifying anthracite. On account of this, during the Six-Year Plan North Korea imported plant facilities from the West and built the Urea Fertilizer Plant of the Ch'ongnyon Combined Chemical Enterprise in Anju District, South P'yongan Province. This became the first plant in North Korea producing urea fertilizer by means of hydrogen gas obtained from pyrolytic naphtha cracking. But the production facilities for ammonia of the Aoji Chemical Plant which are being built with Soviet aid for completion during the second Seven-Year Plan (1978-1984) are adapted to the old coal gasification method, which would indicate that North Korea is still relying on coal as a source material.

This, it is believed, is due to the fact that North Korea is not blessed with petroleum resources and to its fear that big powers, especially the Soviet Union and China, may again use petroleum as a political tool.

In its Six-Year Plan North Korea announced that the annual production capacity of chemical fertilizer was set at 3 million tons, of which phosphate fertilizer accounted for 1 million tons. Again, under the second Seven-Year Plan the total annual production capacity is projected to reach 5 million tons.

Chemical Fertilizer Plants

Name	Location	Products	Remarks	Source
Hungnam Combined Fertilizer Enterprise (April 17 Factory)	Hungnam District, Hamhung City, So Hamgyong Prov	Ammonium sulfate, ammonium nitrate lime, superphosphate of lime, microelement fertilizer (magnesium sulfate), lime nitrogen urea fertilizer, agricultural chemicals	Superphosphate Plant and Urea Fertilizer Plant are completed under 1st 7-year Plan. Annual production capacity of nitrogenous fertilizer: 1 million tons. Production capacity of calcium superphosphate fertilizer: 100,000 tons. The enterprise has Mandok Mine under its umbrella. The enterprise has an electrode subplant under its umbrella. He secretary of party committee: Sin Su-kun	KK-44-37 KK-37-93 KK-36-50 NS 781123 NS 790119 KS 750411
Aoji Chemical Plant	Undok County, No Hamgyong Prov	Ammonium bicarbonate, phosphate fertilizer, methanol	Construction with Soviet aid of ammonia production facilities with an annual production capacity of 50,000 tons is projected under second 7-year plan*. As of 1978, coal gasification facilities are under construction. As of 1979, an ammonia fertilizer production system is under construction.	KK-38-41 NS 790324 PR 790602
Ch'ongsu Chemical Plant	Ch'ongsu County, No P'yongan Prov	Lime nitrogen, deliquescent phosphate fertilizer, phosphate fertilizer, microelement fertilizer	Plant bulletin writer/correspondent: Yi Won-nyong	NS 781105 NS 790327 NS 770320
Haeju Phosphate Fertilizer Plant	Haeju City, So Hwanghae Prov	Deliquescent phosphate fertilizer	Construction is completed in 1972.	KN-7406-25

(Continued on next page)

Chemical Fertilizer Plants (contd)

Name	Location	Products	Remarks	Source
Sunch'on	Sunch'on County,	Lime	Construction projects are carried out in 1974 for 200,000 ton annual capacity lime furnace, rotary nitrogen reduction furnace, and nitrogen separator. Plant bulletin writer: Yi Ho-su	KK-07-35
Lime	So P'yongan Prov	nitrogen		
Nitrogen				
Fertilizer				
Plant				NS 781220
Ch'o..jjin	Ch'ongjin City	Lime	Plant bulletin writer: Chong Pong-ik	NS 790212
Lime		nitrogen		
Nitrogen				
Fertilizer				
Plant				
Kaech'on	Kaech'on County,	Lime	Plant bulletin writer: Chong Pong-ik	NS 790212
Lime	So P'yongan Prov	nitrogen		
Nitrogen				
Fertilizer				
Plant				
Huich'on	Huich'on City,	Lime		
Lime	Chagang Prov	nitrogen		
Nitrogen				
Fertilizer				
Plant				
Sinch'on	Sinch'on County,	Lime		
Lime	So Hwanghae Prov	nitrogen		
Nitrogen				
Fertilizer				
Plant				
Sinwon	Sinwon County,			
Calcium	So Hwanghae Prov			
Hydroxide				
Plant				
Kanggye	Kanggye City,			
Microbe	Chagang Prov			
Fertilizer				
Plant				
Chemical	Kangdok-tong,	Ammonium	In 1978 President Kim gives his teachings for quantity production of silicic fertilizer.	KK-50-24
Shop,	Songp'yong	sulfate,		
Kimch'aek	District,	silicic		
Combined	Ch'ongjin City	fertilizer		
Iron Works				

(Continued on next page)

Chemical Fertilizer Plants (ctd)

Name	Location	Products	Remarks	Source
Chemical Shop, Hwanghae Combined Iron Works	Songnim City, Wo Hwanghae Prov	Ammonium sulfate, silicic fertilizer		
Fertilizer Subplant, Hungnam Smeltery	Hungnam District, Hamhung City, So Hwangyong Prov	Phosphate fertilizer	Production of phosphate fertilizer reported in 1975.	NS 750322
Fertilizer Shop, Mup'nyong Smeltery	Mup'nyong Laborers Settlement, Munch'on County, Kangwon Prov	Microelement fertilizer, phosphate fertilizer	Production of phosphate fertilizer is reported in 1975.	NS 750803
Fertilizer Subplant, Mamp'o Smeltery	Mamp'o Smeltery, So P'yongan Prov	Phosphate fertilizer	Production of phosphate fertilizer is reported in 1975.	NS 751201
Smeltery			Subplant Superintendent: Hong Ch'on-kwon	NS 780127
Haeju Smeltery	Haeju City, So Hwanghae Prov	Phosphate fertilizer	Production of phosphate fertilizer is reported in 1975.	NS 751202
Urea Fertilizer Plant, Ch'ongnyon Combined Chemical Enterprise	Anju District, So P'yongan Prov (formerly Hamhung-ri, Pakch'on County, So P'yongan Prov)	Urea fertilizer	Construction is completed in 1976.	NS 760415
Tanch'on Smeltery	Tanch'on County, So Hwangyong Prov	Phosphate fertilizer	As of 1978, construction is in progress.	KK-50-23
Sandung Chemical Plant	Sandung-ri, Kangdong County, So P'yongan Prov	Microelement fertilizer	Plant bulletin writer: Ho Ch'ang-son	NS 771222

* The ammonia production of one certain factory in Japan (Nippon Kasei's Onahama Plant) is, as of 1979, 1,000 tons a day; urea, 940 tons.
(End this table)

21. Pharmaceutical Plants

North Korea's pharmaceutical plants can be divided into two groups: one which produces synthetic chemical medicines and the other which produces medicines from herbs.

Major plants among those producing synthetic chemical medicines are Sunch'on Pharmaceutical Plant, Hungnam Pharmaceutical Plant, Pyongyang Pharmaceutical Plant and Sinuiju Mycin Plant which was completed about 1977. These plants are all producing terramycin and penicillin. The others are plants producing herb medicines. North Korea is making an extraordinary input of effort into the production of herb medicines; and its medical science, too, is more advanced in the Chinese science of herbal medicine under Chinese influence.

Therefore, all the plants producing herb medicines are on the cottage industry order. Moreover, in North Korea, dispensaries attached to factories are producing medicines on their own, with emphasis put on encouraging each locality to produce medicines on its own as much as possible. In general, it may be said that North Korea's pharmaceutical industry is poor, way below the world standard.

Pharmaceutical Plants

Name	Locality	Products	Remarks	Source
Sunch'on Pharmaceuti- cal Plant (Pharmaceu- tical Plant where Comrade Yi Song-sam is working) (December 25 Factory)	Sunch'on County, So P'yongan Prov	Terramycin, penicillin, aspirin, injections	The plant has over 100 engineers and scores of specialists. The plant has a glass shop and motor shop. President Kim gives his on-the-spot guidance on 25 September 1968. Plant bulletin writer: Pak Chong-ok	KX-41-43 NS 770402 KN-7710-33 NS 780323
Sinuiju Mycin Plant	Sinuiju City, No P'yongan Prov	Antibiotics	Plant construction is completed about 1977.	KX-37-35
Sinuiju Pharmaceuti- cal Plant	Sinuiju City, No P'yongan Prov	Syrup, Lidan (mouth freshener), Kumyongsu [lifesaving water], injections, synthetic medicines	Plant bulletin writer: Kim Song-kyun Plant produces some 50 kinds of medicines.	NS 781220 NS 770401
Kanggye Pharmaceuti- cal Plant	Kanggye City, Chagang Prov	Herb medicines		
Myesan Pharmaceuti- cal Plant	Myesan City, Yanggang Prov	Herb medicines		
Naman Pharmaceuti- cal Plant	Naman District, Ch'ongjin City	Plant chemicals, synthetic medicines	In 1977, the plant succeeds in research for production of plant chemicals and synthetic medicines. The plant has No 1 to No 3 shops. Plant bulletin writer/NODONG SIMMUN cor-respondent: Ch'oe Pong-son	NS 770805 NS 790123 NS 790123
Pakch'on Pharmaceuti- cal Plant	Pakch'on County, No P'yongan Prov	Herb medicines, injections	Plant bulletin writer: Pak Ch'an-yong	NS 790121

(Continued on next page)

Pharmaceutical Plants (Continued)

Name	Location	Products	Remarks	Source
Chuul Pharmaceuti- cal Plant	Kyongsong County, Ch'ongjin City	Herb medicines	The plant has 4,000 p'yong of medicinal herb field.	NS 781009
Hungnam Pharmaceuti- cal Plant	Hungnam District, Hamhung City, So Hamgyong Prov	Synthetic medicines	The plant has an ethylene tower as part of plant facilities.	NS 771028
Chaeryong Pharmaceuti- cal Plant	Chaeryong County, So Hwanghae Prov	Herb medicines	Plant bulletin writer: So Il-song	NS 780225
Kaech'on Pharmaceuti- cal Plant	Kaech'on County, So P'yongan Prov	Herb medicines		
Onch'on Pharmaceuti- cal Plant	Onch'on County, So P'yongan Prov	Herb medicines	Plant bulletin writer: Kim Chung-ko ¹	NS 770316
Pyongyang Pharmaceuti- cal Plant	Pyongyang City	Synthetic medicines	Production capacity is increased fivefold in 1978.	NS 780820
Oesong Pharmaceuti- cal Plant	Oesong District, Pyongyang City	Herb medicines		
Tae'an Elec- trical Equip- ment Factory Hospital	Tae'an City, So P'yongan Prov	Antibiotics	The hospital is equipped with various provisions.	NS 790201
Namp'o Children's Medicine Plant	Namp'o City, So P'yongan Prov			
Kyongsong Disabled Veterans Injections Plant	Kyongsong County, Ch'ongjin City	Injections		

(Continued on next page)

Pharmaceutical Plants (Continued)				
Name	Location	Products	Remarks	Source
Changjin Disabled Veterans	Changjin County, So Hamgyong Prov	Herb medicines		
Pharmaceuti- cal Plant				
Sakchu Disabled Veterans	Sakchu County, No P'yongan Prov	Herb medicines	Plant bulletin writer: Pak Sang-son	NS 780604
Pharmaceuti- cal Plant				
[End this table]				

V. Building Materials Industry

22. Cement Plants

Throughout its territory North Korea has rich deposits of limestone, the main raw material for the cement industry. North Korea also abounds in white clay, feldspar and silica. Thus North Korea has favorable conditions for developing the cement industry. Before the world war Japan had built many cement plants in North Korea, among them being the Haeju Cement Plant, Sunghori Cement Plant and Komusan Cement Plant. The annual production capacity of all the cement plants including these plants left behind by Japan in North Korea was about 1 million tons. But much of the production facilities was destroyed during the Korean War and even after the Postwar Rehabilitation Three-Year Plan (1954-1956), the production still did not reach the prewar level. During the first Five-Year Plan (1957-1960) the 2.8 Cement Plant was built with Soviet aid after which cement production began in real earnest. During the first Seven-Year Plan (1961-1970) the policy was pursued to simultaneously carry out economic construction and national defense construction, and to meet the increasing demands of cement for "fortification of the whole country," cement plant expansion projects were pushed.

During the Six-Year Plan (1971-1976) projects were pushed to build a cement industry base in the Ch'onnae District, along with expansion projects for existing cement plants. It was during this period that Kowon Cement Plant and Puraesan Cement Plant were built.

The construction with Japanese aid of Sunch'on Cement Plant with a 3-million ton capacity was completed at the end of 1977. For this largest and latest cement plant, North Korea has a plan to install two 1 million ton rotary ovens.

Following the construction of the Sunch'on Cement Plant, North Korea announced that its national annual production capacity of cement was 8 million tons as of 1978. Under the second Seven-Year Plan (1978-1984) the annual production capacity is projected to reach 12-13 million tons. As North Korea has large demands of cement for military purposes while exporting it as a key material to earn foreign currencies, it is believed that North Korea will make considerable efforts to reach the target.

As to the plant facilities of Sunch'on Cement Plant, Nippon Kokan, Nippon Seitetsu and Mitsui Zosen supplied cement manufacturing facilities; Kobe Seiko and Kawasaki Jukogyo, limestone mining facilities, Toshiba, electrical equipment; and railway equipment and bagging plant facilities were also provided by Japan. The total contract amount for these exports from Japan to North Korea was the huge sum of DM386.6 million.

According to an official North Korean announcement, its export cement carries the brand name "Deer" and its ingredients are: 25 percent or below of SO_2 ; 4.5 percent or below of M_2O ; fineness, $2,250 \text{ cm}^2/\text{g}$; refractoriness, 3,400 lbs/Sq.in. after 7 days.

Cement Plants

Name	Location	Products	Remarks	Source
Sunch'on Cement Plant	Sunch'o County, So P'yongan Prov	Portland cement	Construction is completed at end of 1977, with an annual production capacity of 3 million tons. The plant has 3 rotary ovens. In 1976, a 1.5 ton blastig is set off in limestone quarry. President Kim gives his on-the-spot guidance on 16 October 1978. Plant bulletin writer: Kim Man-ung	MC 761231 NS 760226 NS 760604 NS 781019 NS 780331
2.8 Cement Plant (Subplant=formerly Madong Cement Plant=formerly Asano Cement)	Masan-ri, Pongsan County, No Hwanghae Prov	Portland cement	Plant construction is completed with Soviet aid on 8 February 1959. Installation of two large rotary ovens is completed in 1974. The plant has 6 rotary ovens (2 ovens additionally installed under 6-year plan). Complete automation is achieved during 6-year plan. Annual production capacity: 1.2 million tons Manager: Kang Yong-kol Plant bulletin writer: Chong Tok-cho	CS-5933-33 KK-05-65 NC 760808 NS 771219 KK-18-51 JR NS 780923
Haeju Cement Plant	Haeju City, So Hwanghae Prov	Portland cement, fireproof materials	In 1978, installation is completed of a 1,120m belt conveyor system connecting the plant and Haeju harbor. The plant has 4 rotary ovens. The plant has Sintokpun Mine (lime) under its umbrella. Construction is in progress in 1978 of No 3 Cement Silo at Haeju harbor.	NS 780216 GH-7604-04 MC 780115 MC 781109
Sunghori Cement Plant (May 29 Factory)	Sungho District, Pyongyang City	Portland cement, white cement, slaked lime, fireproof materials	After the Korean War, operation begins with annual production of 300,000 tons. The plant has 4 rotary ovens. Plant bulletin writer: Han Ik-su	A-5812-69 KN-7410-01 NS 770803
Ch'onnaeri Cement Plant	Ch'onnae County, Kangwon Prov	Portland cement, slate		

(Continued on next page)

Cement Plants (Continued)

Name	Location	Products	Remarks	Source
Komusan	Puryong District,	Portland cement	The plant has 2 rotary ovens.	MC 760205
Cement Plant Ch'ongjin City			Plant bulletin writer: Kong Yon-son	NS 780206
Puraesan	Kwon County,	Portland cement	Plant construction is completed under 6-year plan.	NS 750923
Cement Plant So Hamgyong Prov				
Pukch'ang	Pukch'ang County,		The plant has 2 rotary ovens.	MC 761208
Cement Plant	So P'yongan Prov		Plant bulletin writer: Kong Pyong-nyong	NS 770219
Pusanri	Pusan-ri,	Portland cement		
Cement Plant Sunch'on County, (formerly So P'yongan Prov Sunch'on				
Cement Plant)				
Sinwon	Winwon County,			
Cement Plant	So Hwanghae Prov			
Unsan	Unsan Laborers' Settlement,			
Cement Plant	Sunch'on County, So P'yongan Prov			
Tokch'on	Tokch'on County,			
Cement Plant	So P'yongan Prov			
Ch'ongjin	Ch'ongjin City			
Cement Plant				
Cement Shop, Kangson	Tae'an City, So P'yongan Prov	Clinker cement	Existence of the shop is confirmed in 1976 as a shop of the combined steel works.	NS 760324
Combined Steel Works				
Kujang	Kujang County,	Portland cement		
Cement Plant	So P'yongan Prov			
Kwon	Kwon County,		Plant construction is completed under 6-year plan.	NS 750923
Cement Plant	So Hamgyong Prov			

[End this table]

23. Fireproof Materials and Magnesium Plants

North Korea possesses a world-class magnesite mine. This is the Yongyang Mine located in the Yongyang Laborers' Settlement, Tanch'on County, South Hamgyong Province. The magnesite ore of Yongyang Mine is transported via the Hamnam Line, which was electrified in 1978, to Tanch'on Magnesium Plant in Tanch'on and Songjin Fireproof Materials Plant in Kim Ch'aek City, where the ore is turned into magnesia clinker, which in turn is manufactured into fireproof materials by Songjin Fireproof Materials Plant and Kangdok Fireproof Materials Plant in Ch'ongjin City.

This magnesia clinker is a key material for steel-making furnace firebricks and at the same time, is a major export item of North Korea. For this reason, North Korea is making an input of great effort into the production. In 1977, North Korea installed a large rotary oven at Songjin Fireproof Materials Plant, and at the beginning of 1979, two 110m long rotary ovens at Tanch'on Magnesium Plant. Moreover, under the second Seven-Year Plan (1978-1984) the construction of a large magnesium plant is scheduled. In order to supply magnesite ore to these plants, large-scale mine tapping is projected under the second Seven-Year Plan.

Fireproof Materials and Magnesium Plants

Name	Location	Products	Remarks	Source
Tanch'on Magnesium Plant (Factory Where Comrade Kim Ung-kyom Is Working)	Tanch'on County, So Hamgyong Prov	Magnesia clinker	The plant has 4 rotary ovens as of 1978. In 1978, installation of two 110m rotary ovens is pushed. Product is exported to the Soviet Union and other Socialist countries. Electricity is supplied from Hoch'on'gang Power Station. Plant bulletin writer: Yi Su-ch'ol Plant bulletin writer: Yi Chong-ku Plant bulletin writer: Kim Sang-nip Magnesia clinker rotary oven is installed in 1977.	MC 780201 NS 790328 KK-40-67 NS 780905 NS 790406 NS 790103 NS 780322 NS 770224
Songjin Fireproof Materials Plant	Kim Ch'aek City, No Hamgyong Prov	Basic fireproof materials, magnesia clinker		
Kangdok Fireproof Materials Plant	Kangdok-tong, Songp'yong District, Ch'ongjin City	Basic fireproof materials	Plant bulletin writer: Cho Pyong-on	NS 790204
Saenggiriyong Ceramics Plant	Saenggiriyong Laborers' Settlement, Kyongsong County, Ch'ongjin City	Ceramic ware, tiles		
Kangnam Ceramics Plant	Kangnam County, Pyongyang City			
Anbyon Ceramics Plant	Anbyon County, Kangwon Prov	Tiles		

[End this table]

24. Glass Factories

North Korea has several glass factories as shown in the table below, the largest being Namp'o Glass Factory, which uses as its raw material silica at Monggump'o, Changyon County, South Hwanghae Province. Deposits of silica at Monggump'o are said to be inexhaustible; so North Korea is blessed with the raw material for glass production. Under the second Seven-Year Plan (1978-1984), the production of a large glass factory is scheduled in Haeju City near Monggump'o.

Details of the flat glass production volume are unknown. The production goal under the first Seven-Year Plan (1961-1970) was set at 10 million m³ but it is believed the goal was not reached until about the middle of the Six-Year Plan (1971-1976).

Glass Factories

Name	Location	Products	Remarks	Source
Namp'o Glass Factory	Namp'o City, So P'yongan Prov	Flat glass, thermometers, other glassware	In 1975, construction of a subplant for glass containers is completed. The factory has a glass bottle plant under its umbrella. In 1979, the factory produces 350,000 agricultural thermometers in 50 days. Completion of a glass rolling shop is scheduled under 2d 7-year plan. Factory bulletin writer: Kim Yong-ch'an	NS 751123 NS 750518 NS 790305 KK-44-38 NS 780520 NS 750923
Iwon Glass Factory	Iwon County, So Hamgyong Prov	Flat glass	Factor, construction is completed under the 6-year plan.	
Kaesong Glass Factory	Kaesong City	Flat glass		
Sinuiju Flat Glass Factory	Sinuiju City, No P'yongan Prov	Flat glass	The factory sends gift to national meeting of educational activists.	NS 781002
Ch'ongjin Glass Factory	Ch'ongjin City	Flat glass		
Tongbu District Glass Factory		Flat glass	Factory construction with a 10 million m ² capacity is scheduled under 2d 7-year plan.	KK-44-38
Sobu District Glass Factory	Haebu City, So Hwanghae Prov	Flat glass	Factory construction with a 10 million m ² capacity is scheduled under 2d 7-year plan.	KK-44-38

(End this table)

25. Paper and Pulp Mills

North Korea's largest paper mill is located in Sinuiju where Oji Seishi used to produce paper in Japanese days. After the world war, North Korea built in this location factories called Sinuiju Chemical Fiber Plant and Sinuiju Pulp Mill.

A characteristic of this pulp mill is that it is using as its raw material the reed inexhaustibly available on Pidan-som (Island of Silk) in Yongch'on County, North P'yongan Province.

Heretofore, Hyesan Paper Mill has been the only mill exclusively producing kraft paper. At present, the construction of November 8 Factory is under way in Anju District, South P'yongan Province. When completed, this factory will be producing kraft paper in quantity as packing paper for products of the Ch'ongnyon Combined Chemical Enterprise and other factories. Incidentally, this factory is being built with the aid of the West and will become North Korea's largest factory exclusively producing kraft paper.

Paper and Pulp Mills

Name	Location	Products	Remarks	Source
November 8 Factory	Anju District, So P'yongan Prov (formerly, Nashung-ri, Pakch'on County, No P'yongan Prov)	Kraft paper	The factory is part of the Ch'ongnyon Combined Chemical Enterprise.	D-Vol 6-206
Sinch'on Paper Mill	Sinch'on County, So Hwanghae Prov			
Hyesan Paper Mill	Hyesan City, Yanggang Prov	Kraft paper	Section Chief: Yi Pong-nim	NS 770211
Hanhung Paper Mill (September 2 Paper Mill)	Hanhung City, So Hamgyong Prov			
Pyongyang Paper Mill	Pyongyang City			
Hoeryong Paper Mill	Hoeryong City, No Hamgyong Prov		Operation begins on 5 December 1972.	NS 721208
Paper Mill, Sinuiju Chemical Fiber Plant	Sinuiju City, No P'yongan Prov	Newsprint		
Pukch'ang Paper Mill	Pukch'ang County, So P'yongan Prov		Mill bulletin writer: Ha Sang-ok	NS 770329
Kilchu Paper Mill	Kilchu County, No Hamgyong Prov	Rayon pulp	The mill resolves in 1978 to complete rayon pulp reinforcement project ahead of schedule. Mill bulletin writer: Chang Chae-hol	NS 781129
Sinuiju Pulp Mill	Sinuiju City, No P'yongan Prov	Rayon pulp	Annual production capacity: 50,000 tons	NS 790401 D-7010-42

(End this table)

VI. Light Industries

26. Spinning, Weaving and Knitting Mills

North Korea has been producing vinalon, cotton and silk fabrics with its own technology and raw materials. The largest of the mills is the Pyongyang General Textile Mill, which was built with Soviet aid.

The next largest mills are located in Sinuiju and Sariwon, which are equipped with Chinese-made looms. The looms have now become very antiquated.

During the Six-Year Plan (1971-1976) the September Textile Mill was built underground as a military factory in Kanggye City, Chagang Province. Kusong Textile Mill is also an underground factory, and to date, North Korea has released no pictures showing an overall view of this mill. Attention came to be paid to people's clothing problems under the Six-Year Plan and knitting mills were built at various places. Practically all of these mills have been equipped with Okuma Morat [Mole Rat?] knitting machines. Incidentally, among these mills there are several knitting mills donated by GAKRJ.

North Korea exports the knitted goods produced by these mills to the Soviet Union and other countries. But as much of the raw materials used for the products is imported, the exports are not earning as much foreign currency as hoped for. At present, the construction of a petrochemical fiber plant, a first in North Korea, is under way in Anju District, South P'yongan Province. Generally speaking, the clothes the North Korean people are wearing are very poor compared with those of the people of the Republic of Korea or Japan.

Spinning and Weaving Mills

Name	Location	Products	Remarks	Source
Pyongyang General Textile Mill (formerly Pyongyang Textile Mill)	Son'gyo District, Pyongyang City		Mill construction is completed with Soviet aid under 1st 5-year plan (60,000 spindles). Construction of a general chemical fiber shop is completed in 1974. The mill produces one-ninth of total national textile goods. Number of employees: about 5,000 (3,700 of whom are female employees) The mill established the relationship of a sister with (Orekhova Zhuba) Textile Mill. Manager: Yi Sang-hyon Deputy Manager: Kim Il-hong Mill bulletin writer: Chon Su-kyong Mill construction is completed on 14 October 1972.	A-5812-68 KX-07-35 RR 790308 RR 790308 KX-50-18 NS 741229 RR 790309 NS 780325 NS 721115
September Textile Mill	Kanggye City, Chagang Prov			GH-7809-45
Kusong Textile Mill	Kusong County, No P'yongan Prov		The mill is an underground factory with a 10,000 spindle capacity. Number of employees: 2,000 Manager: Kim Ung-nyong Mill bulletin writer: Han Kwang-su	GH-7809-45 NS 790408 NS 790327
Sariwon Textile Mill (May Textile Mill)	Sariwon City, No Hwanghae Prov	Cotton spinning	Mill construction is completed under [1st] 7-year plan. Commencement of operation is reported in 1974. Number of technical innovators: 2,000 Spinning machines are Chinese-made.	KX-44-39 KX-07-35 RR 780314 KX-22-38
Sinuiju Textile Mill (August Textile Mill)	Sinuiju City, No P'yongan Prov	Cotton yarn, woven stuff	Chief Engineer: Pak Tae-kyu Mill bulletin writer: Chong T'ae-sun	MC 790104 NS 770202
Pyongyang Yarn Factory	Pyongyang City		The factory is reported to be Toyo Seishi of Japanese days. Factory site: some 100,000m ² Chief Engineer: Yi Ch'un-hui Factory bulletin writer: Cho Ch'un-o	KX-48-82 KX-51-36 NS 760309 NS 780227

(Continued on next page)

Spinning and Weaving Mills (Continued)

Name	Location	Products	Remarks	Source
Hamhung Yarn Factory	Hamhung City, So Hamgyong Prov	Silk thread	Factory bulletin writer: Cho Ch'un-o	NS 780813
Songch'on Yarn Factory	Sonch'on County, So P'yongan Prov		Factory bulletin writer: Chu Pong-su	NS 780418
Kanggye Textile Mill	Kanggye City, Chagang Prov		Factory bulletin writer: Kim Ch'ang-kyong	NS 790209
Kaesong Textile Mill	Kaesong City	Woven stuff	Factory construction is completed in 1978 with a 50,000 capacity.	KK-54-43
Kanggye Knitting Factory	Kanggye City, Chagang Prov		Mill bulletin writer: Han Kwang-su	NS 780416
Kanggye Knitting Factory	Kanggye City, Chagang Prov		Factory construction is completed under [1st] 7-year plan.	KK-44-39
Haeju Knitting Factory	Haeju City, So Hwanghae Prov		Factory is equipped with Okuma knitting machines.	NS 781207
Yangdok Textile Mill	Yangdok County, So P'yongan Prov		Manager: O Sung-sun	CL-7801-56
Sinuiju Knitting Factory	Sinuiju City, So P'yongan Prov		Factory cuts cost 6.4 percent in 1978.	NS 781203
Hamhung Knitting Factory	Hamhung City, So Hamgyong Prov	Socks		
Wonsan Knitting Factory	Wonsan City, Kangwon Prov	300 kinds of knitted goods	Factory construction is completed in September 1972.	CS-7401-11
Pyongyang Knitting Factory	Pyongyang City		Soviet-made knitting machines are installed.	KK-22-38
Hamhung Woolen Textile Mill (October 7 Factory)	Hamhung City, So Hamgyong Prov	Woolen yarn, fabrics woven with vinalon yarn	Construction of a vinalon-silk textile shop is completed in 1976.	KK-31-13
Where Comrade Yi Kil-tu Is Working)			Mill bulletin writer: Chu Mu-nam	NS 770304

(Continued on next page)

Spinning and Weaving Mills (Continued)

Name	Location	Products	Remarks	Source
Sariwon Towel Factory	Sariwon City, No Hwanghae Prov		Production activity is confirmed in 1978.	MC 781123
Kaesong Garment Factory	Kaesong City		The factory is awarded the Order of Kim Il-song in 1978.	KS 780906
Ch'onma Textile Mill	Ch'onma County, No P'yongan Prov		Manager: Ch'oe Ch'un-yong	NS 740315
Pyongyang Patriotic Knitting Factory	Pyongyang City		Factory construction is completed in 1972 as donation from GAKRJ. Okuma Knitting machine are installed.	KK-31-56 KK-22-38
Songnim Patriotic Knitting Factory	Songnim City, No Hwanghae Prov		Factory is a donation from the Edogawa Chapter and No 2 Ueno subchapter of Taito Chapter, GAKRJ.	KK-31-56
Kangso Patriotic Knitting Factory	Tae'an City, So P'yongan Prov		Factory is a donation from the Edogawa Chapter and No 2 Ueno subchapter of Taito Chapter, GAKRJ. Factory is built at the foothills of Sohak Mountain.	KK-31-56 CG-7706-72
Hyesan Flax Factory	Hyesan City, Yanggang Prov		Factory construction is completed under [1st] 7-year plan.	KK-44-39

[End this table]

27. Footwear Factories

In North Korea there are shoe factories in every province (directly administered city), the largest among them being Pyongyang Shoe Factory. In addition, there are a large number of shoe factories as local industry factories.

Shoe factories equipped with modern shoe-making machinery were not built until the Six-Year Plan (1971-1976). Under the second Seven-Year Plan (1978-1984), shoe production capacity is projected to reach 100 million pairs.

Footwear Factories

Name	Location	Products	Remarks	Source
Pyongyang Shoe Factory	Pyongyang City	Leather shoes	Factory construction with a 3 million pair capacity is completed under 6-year plan.	NS 771217
Kaesong Shoe Factory	Kaesong City		Factory bulletin writer: Yom Ho-kil	NS 790205
Sunch'on Shoe Factory	Sunch'on County, So P'yongan Prov		Factory is remodeled and expanded under 6-year plan.	KK-44-39
Hungnam Shoe Factory	Hungnam District, Hamhung City, So Hamgyong Prov		Factory is remodeled and expanded under 6-year plan.	KK-44-39
Hamhung Shoe Factory	Hamhung City, So Hamgyong Prov			
Hyesan Shoe Factory	Hyesan City, Yanggang Prov			
Ch'ongjin Shoe Factory	Ch'ongjin City			
Wonsan Shoe Factory	Wonsan City, Kangwon Prov			

[End this table]

28. Foodstuff Factories

During the Six-Year Plan (1971-1976) North Korea built integrated food manufacturing plants called cornstarch factories in every province and directly administered city. The cornstarch factories are not food factories on the cottage industry scale but are central factories equipped with modern facilities. One may justly claim that the cornstarch factory is one of the outstanding achievements under the Six-Year Plan.

What is outstanding about the cornstarch factories is that they primarily process corn to produce oil and corn rice, a synthetic rice. In light of the fact that North Korea's rice production is essentially limited and that rice is an item for export as well as for stockpiling, obviously it is North Korea's policy to depend on corn for more than one-half of staple food.

North Korea calls the synthetic rice "okssal" or corn rice, which means rice made of corn. As the word indicates, okssal is made from corn powder bonded into the shape of rice. This is North Korea's answer to the earnest desire of the people to eat rice.

In 1977 North Korea for the first time built an instant noodle factory in Pyongyang. The plant facilities were supplied by Chosen Soren from Japan.

Foodstuff Factories

Name	Location	Products	Remarks	Source
Pyongyang Cornstarch Factory	Pyongyang City	Synthetic rice, flour, confectionery, taffy, starch, albumin	Annual production capacity is expanded to 100,000 tons. Operation begins in 1977.	KX-44-39 KX-37-94
Wonsan Cornstarch Factory	Wonsan City, Kangwon Prov	Synthetic rice, flour, confectionery, starch syrup, noodle, wine, sugar, edible oil	Operation begins in 1974. Manager: An Kun-sok Factory has a standard gage railway siding to the factory.	KX-46-41 NS 771120 NS 790406
Haeju Cornstarch Factory	Haeju City, So Hwanghae Prov	Cornstarch, edible oil, soy, starch syrup, sugar		
Sariwon Cornstarch Factory	Sariwon City, No Hwanghae Prov		Operation begins in 1974.	RR 780725
Uiju Cornstarch Factory	Uiju County, No P'yongan Prov	Starch syrup, edible oil		
Pukch'ang Cornstarch Factory	Pukch'ang County, So P'yongan Prov			
Hamhung Cornstarch Factory	Hamhung City, So Hamgyong Prov	Synthetic rice, sugar, soy, edible oil	Okssal oil is produced. Factory construction is completed in 1974.	NS 790322 NS 740907
Changgye Cornstarch Factory	Changgye City, Changgye Prov		Factory construction is completed in 1974.	NS 740907

(Continued on next page)

Foodstuff Factories (Continued)

Name	Location	Products	Remarks	Source
Hoeryong Cornstarch Factory	Hoeryong County, No Hamgyong Prov	Starch syrup, tobacco, edible oil, synthetic rice		
Pyongyang Patriotic Noodle Factory	Pyongyang City	Instant noodle	Factory construction is completed on 30 May 1977. Factory is donated by GAKRJ.	NS 770530 NS 770530
Pyongyang Patriotic Glucose Factory	Pyongyang City	Glucose	Factory construction completion is marked by ceremony held on 14 April 1979.	NS 790415
Pyongyang General Wheat Flour Processing Factory	Pyongyang City	Wheat flour	Factory construction with an annual 100,000 NS 771217 ton capacity is completed under 6-year plan. Construction completion in 1978 is reported. NS 780906 Annual production capacities: wheat flour, RR 790521 100,000 tons; noodles, 10,000 tons; bread, 20,000 tons; biscuits, 20,000 tons. Manager: So Un-hwa Chief Engineer: Pak Yong-hum	RR 790521
Namhung Patriotic Cornstarch Factory	Anju District, So P'yongan Prov	Edible oil	President Kim gives his on-the-spot guidance on 20 February 1979.	
Yongbuk Inte- grated General Food Mfg. Plant	Pyongyang City		Chief Engineer: Min Man-ki	NS 771115
Sosong Foodstuff Factory	Pyongyang City		Manager: Pak Chong-song	NS 740406
Paekch'on Disabled Veterans Foodstuff Factory	Paekch'on County, So Hwanghae Prov		Manager: Yi Sok-chin	NS 780302
Pyongyang Beer Brewery	Oesong District, Pyongyang City			

[End this table]

VII. Noms De Guerre of Enterprises and Factories

1. Factories Named by Calendar Date (formal names given in juxtaposition)

February 26 Factory	Huich'on Precision Machine Works
March 10 Factory	Ch'ongjin Steel Works
March 13 Factory	X X Fishing Machine Works
March 14 Factory	Namp'o Communications Equipment Factory
March 25 Factory	Pyongyang Precision Machine Works
March 26 Factory	Pyongyang Electric Wire Factory
March 30 Factory	Pyongyang Coal Mining Equipment Factory
April 3 Factory	Kusong Machine Tool Works
April 13 Factory	April 13 Iron Works
April 17 Factory	Hungnam Combined Fertilizer Enterprise
April 28 Factory	Tanch'on Mining Equipment Factory
May Textile Mill	Sariwon Textile Mill
May 7 Factory	X X Disabled Veterans Communications Equipment Factory
May 8 Factory	X X Forestry Machine Works
May 10 Factory	Nanam Coal Mining Equipment Factory
May 18 Factory	Munch'on Machine Works
May 29 Factory	Sunghori Cement Plant
June 1 Factory	Pyongyang Electrical Device Factory
June 4 Factory	Wonsan Railway Works
June 5 Factory	Chuul Electrical Equipment Factory
June 10 Factory	X X Subplant, Yongsong Machine Works
June 12 Factory	Najin Shipyard
June 15 Factory	Yongsong Machine Works
July 6 Factory	Nahung Railway Works
July 13 Factory	Unsan Tool Factory
August Textile Mill	Sinuiju Textile Mill
August 5 Factory	Pyongyang Construction Equipment Factory
August 8 Factory	Pukchung Machine Works
August 9 Factory	Sinuiju Mining Equipment Factory
August 28 Factory	Kusong Mining Equipment Factory
September Textile Mill	X X Textile Mill
September 2 Factory	Hamhung Paper Mill
September 25 Factory	Sunch'on Pharmaceutical Plant
September 28 Factory	Anju Coupling Farm Machinery Factory

October 5 Factory	Pyongyang Electrical Equipment Factory
October 7 Factory	Hamhung Woolen Textile Mill
October 30 Factory	X X Bearings Factory
November 8 Factory	Paper Mill, Ch'ongnyon Combined Chemical Enterprise
December 5 Factory	X X Machine Works

2. Factories Known by Person's Name (formal name given in juxtaposition)

Shipyard Where Comrade Kang Won-uk Is Working	Yongamp'o Shipyard
Shipyard Where Comrade Kim Ung-kyom Is Working	Tanch'on Magnesium Plant
Factory Where Comrade Kim Ye-myong Is Working	Sinp'o Shipyard
Factory Where Comrade Kim Kyong-myong Is Working	Nagwon Machine Works
Factory Where Comrade Kim Sung-cho Is Working	Unknown
Kim Chong-t'ae Electric Locomotive Works	Pyongyang Electric Locomotive Works
Factory Where Comrade Kim Chong-ul Is Working	Unknown
Factory Where Comrade Kim Hyong-sun Is Working	Pyongyang Precision Machine Works
Shipyard Where Comrade Kim Tong-sok Is Working	Namp'o Shipyard
Factory Where Comrade Kim Tong-yon Is Working	Pon'gung Electrical Equipment Factory
Factory Where Comrade Kim Hung-su Is Working	"Ch'ungsong" Model Tractor Factory
Factory Where Comrade Kye Hyong-sun Is Working	Man'gyongdae Bulldozer Factory
Factory Where Comrade Kim Yong-pom Is Working	Wonsan Motor Works
Factory Where Comrade Chong Myong-ch'ol Is Working	Man'gyongdae Bulldozer Factory
Factory Where Comrade Chong Ch'ung-sop Is Working	Pyongyang Coal Mining Equipment Factory
Shipyard Where Comrade Pak Si-hyong Is Working	Ch'ongjin Shipyard
Factory Where Comrade Paek Ch'ang-tok Is Working	Huich'on Precision Machine Works
Combined Enterprise Where Comrade Ho Min-son Is Working	Comprehensive Electronic Equipment Factory
Shipyard Where Comrade Yi Chi-su Is Working	Wonsan Shipyard
Factory Where Comrade Yi Song-sam Is Working	Sunch'on Pharmaceutical Plant
Factory Where Comrade Yi Kil-tu Is Working	Hamhung Woolen Textile Mill
Factory Where Comrade Yi Won-kwan Is Working	Unknown
Power Station Where Comrade Yang Yong-kwon Is Working	Pyongyang Thermal Power Station

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4. CL - CHOLLIMA, Munnye Publishing House, Pyongyang.
5. CR - CHOSEN SHIRYO, Chosen Mondai Kenkyujo, Tokyo.
6. CS - CHOSON, Choson Pictorial Co., Pyongyang.
7. GH - CHOSEN GAHO, Chosen Gaho-sha, Tokyo.
8. JR - JRCIR, Joint Research Center of International Relations data of the Editorial Department.
9. KK - KITA CHOSEN KENKYU, JRCIR, Tokyo.
10. KN - KONNICH NO CHOSEN, Konnich no chosen Editorial Department, Tokyo.
11. KS - KNS, Korean News Service, Tokyo.
12. MB - Radio Moscow, Moscow (for Far East).
13. MC - MINJU CHOSON, Minju Choson-sa, Pyongyang
14. MY - MUYOK, Korean Foreign Trade Promotion Committee, Pyongyang
15. NB - NITCHO BOEKI, Nitcho Boeki Kai, Tokyo.
16. NC - NODONG CH'ONGNYON, Kumsong Publishing House, Pyongyang.
17. NS - NODONG SINMUN, KWP Central Committee, Pyongyang.
18. PB - Radio Pyongyang, Pyongyang Central Broadcasting Bureau (overseas broadcasts).
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Note: Guide to Sources as Given

The first letter, such as A, B, and so on, and the two-letter acronyms refer to the source material used. The first two numerals following the name of the source material used, indicate the year A.D.; the next two numerals the month, and the last two numerals the day or the page of the publication. But in the case of KK (KITA CHOSEN KENKYU) the first two numerals refer to the issue number and the next numeral or numerals refer to the page. For example:

NS 730727 - NODONG SINMUN, 27 July 1973

GH 7309-10 - CHOSEN GAHO, September 1973 issue, p 19

KK-52-38 - KITA CHOSEN KENKYU, Issue No 52, p 38

Incidentally, in the case of KK, the source of original data is indicated on the page of the issue of KITA CHOSEN KENKYU referred to.

APPENDIX - Administrative Districts

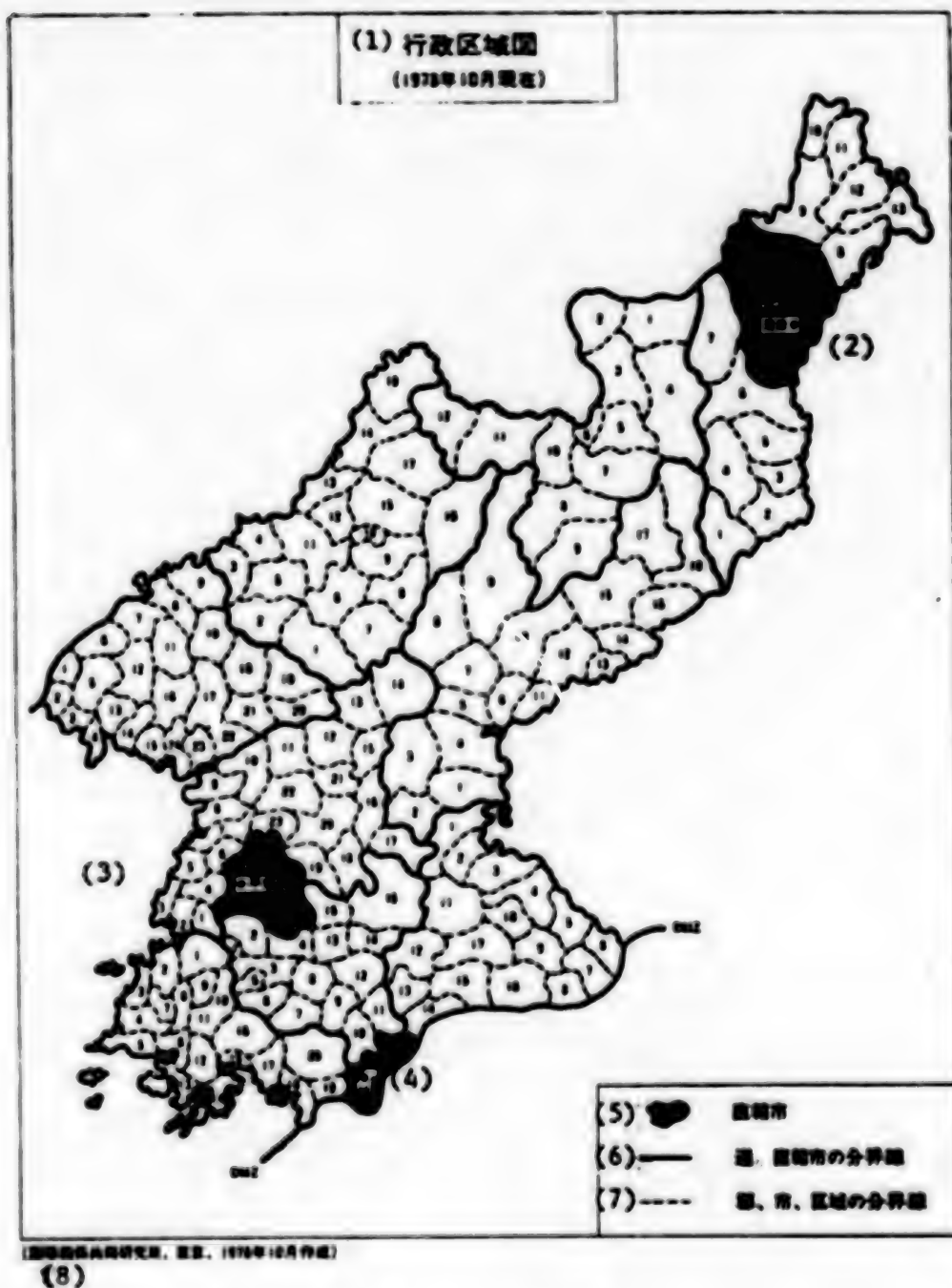
(1) <付録・行政区域図>

(2) 道及び直轄市



Key:

- | | |
|---|-----------------------------|
| 1. Map of administrative districts | 7. Chagang Province |
| 2. Provinces and directly administered cities | 8. Yanggang Province |
| 3. North P'yongan Province | 9. North Hamgyong Province |
| 4. South P'yongan Province | 10. South Hamgyong Province |
| 5. North Hwanghae Province | 11. Kangwon Province |
| 6. South Hwanghae Province | |



Key:

1. Administrative District Map, October 1978
2. Ch'ongjin
3. Pyongyang
4. Kaesong
5. Directly Administered City
6. Provincial and Directly Administered City Boundary
7. County, City, District Boundary
8. Drawn up by the Joint Research Institute for International Relations, Tokyo, October 1978

Directly Administered Cities (3) and Hamhung City

Pyongyang City

1. Oesong District
2. P'yongch' District
3. Pot'onggan District
4. Chung District
5. Moranbong District
6. Sosong District
7. Taesong District
8. Taedonggang District
9. Tongdaewon District
10. Songyo District
11. Nangnang District
12. Mangyongdae District
13. Hyongjesan District
14. Samsan District
15. Yongsong District
16. Samsok District
17. Sadong District
18. Yokp'o District
19. Sungho District
20. Sangwon County
21. Chunghwa County
22. Kangnam County

Ch'ongjin City

1. Ch'ongam District
2. P'ohang District
3. Sunam District
4. Sinam District
5. Nanam District
6. Songp'yong District
7. Puyun District
8. Puryong District
9. Musan County (Note 1)
10. Kyongsong County (Note 2)

Kaesong City

1. Kaesong City
2. Kaep'ung County
3. P'anmun County
4. Changp'ung County

Hamhung City

1. Songch'on District
2. Tonghungsan District (Note 3)
3. Hoesang District
4. Sap'o District
5. Yongsong District
6. Hungnam District

Provinces (9)

South P'yongan Province

1. Yonggang County
2. Namp'o City
3. Onch'on County
4. Tae'an County (Note 4)
5. Pyongsan County
6. Taedong County
7. P'yongwon County
8. Sukch'on County
9. Mundok County
10. Anju County
11. Kaech'on County
12. Tokch'on County
13. Yongwon County
14. Taehung County
15. Maeungsan County
16. Sinyang County
17. Yangdok County
18. Hoech'ang County
19. Kangdong County
20. Songch'on County
21. Pukch'ang County
22. Sunch'on County
23. P'yongsong City*

North P'yongan Province

1. Sinuiju City*
2. Yongch'on County
3. Yomju County
4. Cholsan County
5. Pihyon County
6. Uiju County
7. Sakchu County
8. Ch'angsong County
9. Pyoktong County
10. Tongch'ang County
11. Taegwan County
12. Ch'onma County
13. Tongnim County
14. Sonch'on County
15. Kwaksan County
16. Kusong City
17. T'aech'on County
18. Unsan County
19. Haengsan County
20. Kujang County
21. Yongbyon County
22. Pakch'on County
23. Unjon County
24. Chongju County

Chagang Province

1. Huich'on City
2. Songwon County
3. Usi County
4. Ch'osan County
5. Kop'ung County
6. Chonch'on County
7. Tongsin County
8. Yongnim County
9. Songgan County
10. Kanggye City*
11. Wiwon County
12. Sijung County
13. Manp'o City
14. Chasong County
15. Changgang County
16. Nangnim County
17. Hwap'yong County
18. Chunggang County

Yanggang Province

1. Taehongdan County (Note 5)
2. Samjiyon County
3. Poch'on County
4. Paegam County
5. Unhung County
6. Hyesan City
7. Kapsan County
8. P'ungso County
9. P'ungsan County
10. Samsu County
11. Sinp'a County
12. Huch'ang County

North Hamgyong Province

1. Kim Ch'aek City
2. Hwadae County
3. Myongch'on County
4. Kilchu County
5. Myonggan County
6. Orang County
7. Yonsa County
8. Najin City (Note 7)
9. Hoeryong County
10. Unsong County
11. Saeb'ol County (Note 8)
12. Undok County (Note 9)
13. Unggi County

South Hamgyong Province

1. Kumya County (Note 6)
2. Kowon County
3. Yodok County
4. Chongp'yong County
5. Hamju County
6. Hamhung City*
7. Oro County
8. Changjin County
9. Pujon County
10. Sinhung County
11. T'oejo County
12. Hongwon County
13. Sinp'o County
14. Pukch'ong County
15. Toksong County
16. Iwon County
17. Hoch'on County
18. Tanch'on County

South Hwanghae Province

1. Unch'on County
2. Ulliyul County
3. Kwail County
4. Changyon County
5. Yongyon County
6. Taet'an County
7. Songhwa County
8. Samch'on County
9. Anak County
10. Chaeryong County
11. Sinch'on County
12. Pyoksong County
13. Ongjin County
14. Kangyong County
15. Haeju City*
16. Sinwon County
17. Ch'ongdan County
18. Yonan County
19. Paekch'on County
20. P'yongch'on County

North Hwanghae Province

1. Songnim City
2. Hwangju County
3. Pongsan County
4. Yont'an County
5. Sariwon City*
6. Unp'a County
7. Insan County

8. Sohung County
9. P'yongsan County
10. Kumch'on County
11. Myonsan County
12. Singye County
13. Suan County
14. Koksan County
15. Yonsan County
16. Sinp'yong County

Kangwon Province

1. Ch'onnae County
2. Munch'on County
3. Wonsan City*
4. Anbyon County
5. T'ongch'on County
6. Kosong County
7. Kumgang County
8. Ch'angdo County
9. Wiyang County
10. Kosan County
11. Poptong County
12. P'angyo County
13. Ich'on County
14. Chorwon County
15. P'yonggang County
16. Kumhwa County
17. Sep'o County

(1) [付図2 - 直轄市の市(区域)、郡]



(6) (清津直轄市の市は省略した)

Key:

1. Cities, (districts) and counties of directly administered cities
2. Pyongyang City
3. Ch'ongjin City
4. Hamhung City
5. Kaesong City
6. The city of Ch'ongjin directly administered city is deleted

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